INSTITUTE OF AGRICULTURAL RESEARCH STATISTICS

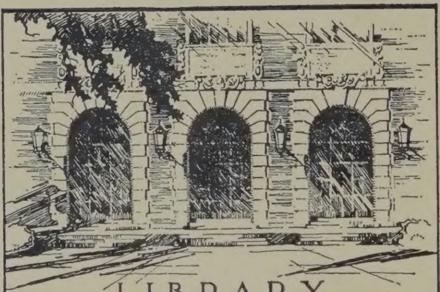
NATIONAL INDEX
OF
AGRICULTURAL
FIELD
EXPERIMENTS

VOL. 3 PART 2

BIHAR

1954—59

PUBLISHED BY
INDIAN COUNCIL OF AGRICULTURAL RESEARCH
NEW DELHI



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FOREWORD

Increase in agricultural production is one of the main objectives of our agricultural planning. It is only by the exploitation of scientific methods of agriculture that we can hope to increase our agricultural production to the level needed for maintaining a reasonable standard of living to the country's population. The technical worth of improvement measures is best judged from carefully conducted field experiments. While it is true that a large number of agricultural field experiments are conducted in the country, the results of these experiments have not been brought together in an integrated manner for the use of research workers. The absence of such a unified account has often led to duplication of work and delay in the utilisation of results for practical farming. The Institute of Agricultural Research Statistics has rendered a very valuable service by preparing a compendium of agricultural field experiments conducted in the country. The first series of compendium containing the results of all agricultural field experiments during the period 1948-53 have already been published by the Institute.

The present compendium is the second in the series covering the period 1954-59. As in the earlier compendium, the present series also contains critical summaries of results of experiments bearing on important agronomic factors, such as the response of crops to fertilizers and manures, inter-relationship of fertilizers, varieties and cultivation practices and other information of value for giving sound advice to farmers in different regions. Judging from the demand for the first series of the compendium, I am sure that the present series will also prove equally useful.

A Standing Committee consisting of the Agricultural Commissioner with the Government of India, the Director, Indian Agricultural Research Institute, and the Statistical Adviser, Indian Council of Agricultural Research, has been set up to provide general guidance to the work under this scheme. I congratulate the members of this Committee and, in particular, the Statistical Adviser and his associates at the Institute of Agricultural Research Statistics for bringing out this compendium. The preparation of this compendium has been made possible only by the wholehearted co-operation of the States and other organisations in making available the results of their experimental researches for this purpose. My thanks are due to the officers of the State Departments of Agriculture and other institutions for participating in this work. I hope that the present series will be followed by periodical publications of similar compendia for later years, in order that the availability, in a consolidated form, of results of scientific experiments in agriculture in India may be maintained up-to-date.

A. D. PANDIT
Vice-President,
Indian Council of Agricultural Research.

NEW DELHI,
March 26, 1965.

PREFACE

The present set of volumes form Part II in the series of compendia of Agricultural Field Experiments being published by the Indian Council of Agricultural Research under the project for National Index of Field Experiments and contains a unified record of experiments conducted at agricultural research stations and institutes all over the country. Volumes in Part I in this series were published in 1962 and contained results of some 7,500 experiments conducted during the period 1948-53. The present set of volumes includes results of experiments conducted during the next period that is 1954-59. After the period, covered by Part I of the series, agricultural research and experimentation has expanded so much that for the period 1954-59, to which the present volumes refer, results of more than 15,000 experiments are available.

The present compendium is prepared on the same pattern as the previous one and is divided into 15 volumes one each for (1) Andhra Pradesh, (2) Assam, Manipur and Tripura, (3) Bihar, (4) Gujarat, (5) Kerala, (6) Madhya Pradesh, (7) Madras, (8) Maharashtra, (9) Mysore, (10) Orissa, (11) Punjab, Jammu and Kashmir and Himachal Pradesh, (12) Rajasthan, (13) Uttar Pradesh (14) West Bengal and (15) All Central Institutes. In each volume, background information of the respective state regarding its division into different soils and agro-climatic regions, rainfall and cropping pattern followed in each region and agricultural production and area under different crops in the State is given. The experiments reported in each volume have been arranged crop-wise for each State. All the experiments belonging to a particular crop at various research stations are Grouped together. For a particular crop, experiments are arranged according to the following classification :

Manurial (M), Cultural (C), Irrigational (I), Diseases, pests and chemicals other than fertilizers (D), Rotational (R), Mixed cropping (X) and combinations of these wherever they occur (*e.g.* CM as Cultural-cum-Manurial). Experiments in which crop varieties also form a factor are denoted by adding V to their symbol and are grouped together (*e.g.* MV as Manurial-cum-Varietal).

This publication owes its origin to the guidance and help of Dr. D.J. Finney, F.R.S., Professor of Statistics, Aberdeen University, Scotland, in formulating the project during his stay at the Institute of Agricultural Research Statistics as an F.A.O. expert in 1952-53.

At the Institute of Agricultural Research Statistics the work under the scheme was carried out under the supervision of Shri. T.P. Abraham, Assistant Statistical Adviser. The actual working of the scheme was conducted by Shri G.A. Kulkarni, Statistician till he left the Institute in July, 1964. The work was subsequently taken over by Shri O.P. Kathuria, Assistant Statistician. Messrs. L.B.S. Somayazulu, P.P. Rao, M.L. Sahni, Harbhajan Singh, A.L. Punhani, M.K. Joshi, N.K. Worrier, H.C. Jain and J.K. Kapoor of the statistical staff of the Institute deserve special mention for careful and painstaking work in editing and scrutiny of the manuscript as well as proofs of the compendium.

The burden of collecting the data from the various research stations and the analysis of a large number of experiments once again fell on the regional staff of the Council placed in different States. They deserve to be congratulated for the hard work they have put in.

Thanks are due to the State Departments of Agriculture, the Central Institutes and the Commodity Committees who made the data of the experiments conducted under their jurisdiction readily available to the staff of the Institute. The present publication has become possible only through their unstinted co-operation. The Institute is also thankful to the various officers in the States who worked as Regional Supervisors for the project from time to time and took keen interest in the working of the Scheme. The list of the names of the regional supervisors and the regional staff of the project is given on the following page.

V.G. PANSE
Statistical Adviser,
Institute of Agricultural Research Statistics (I.C.A.R.).

NEW DELHI,
March 25, 1965.

REGIONAL SUPERVISORS AND REGIONAL STAFF FOR THE NATIONAL INDEX OF FIELD EXPERIMENTS

Region and Headquarter	*Statistical staff from the Institute of Agricultural Research Statistics.*	*Regional Supervisors*
1. Andhra Pradesh (Hyderabad)	S.K. Jilani P.R. Yeri	Dr. Mohd. Quadiruddin khan, Joint Director of Agricultural. Late Dr. Syed Waheeduddin. Shri Md. Khasim Adoni, Joint Director of Extension. Shri N.V. Mohana Rao, Joint Director, Agricultural Research Institute, Rajendranagar. Shri L. Venkataratnam, Deputy Director of Agriculture (Research).
2. Maharashtra (Poona)	P.D. Mehta B. Ramakrishnan	Shri D.S. Rangarao, Statistician, Department of Agriculture.
3. Gujarat (Ahmedabad)	S.P. Doshi	Dr. D. K. Desai, Deputy Director of Agriculture (Statistics). Shri J.B. Trivedi, Deputy Director of Agriculture (Statistics).
4. Uttar Pradesh (Lucknow)	S.N. Bajpai M.P. Saxena G.N. Bahuguna A.C. Srivastava	Dr. K. Kishen, Joint Director of Agriculture (Statistics).
5. Madhya Pradesh (Bhopal)	T. Lokeswara Rao H.C. Gupta	Shri A.G. Khare, Statistician, Department of Agriculture.
6. Punjab, Jammu & Kashmir & Himachal Pradesh (Chandigarh)	A.C. Kaistha B.L. Kaistha M.S. Batra	Shri Piara Singh Sahota, Director of Crop Insurance. Shri Mohinder Singh Pannu, Statistician, Department of Agriculture.
7. Bihar (Sabour)	M.K. Joshi P.C. Kholia	Shri G.P. Singh, Statistician, Department of Agriculture. Shri R.S. Roy, Principal, Agricultural Research Institute, Sabour.
8. Rajasthan (Jaipur)	B.P. Dyundi N.K. Ohri	Shri H.C. Kothari, Statistician, Department of Agriculture,
9. Orissa (Bhubaneswar)	L.B.S. Somayazulu	Shri B. Misra, Deputy Director of Agriculture (Hq.) Shri D. Misra, Principal, Uttakal Krushi Mahavidyalaya, Bhubaneswar.
10. West Bengal (Calutta)	S.N. Nath	Shri S.N. Mukerjee, Statistical Officer, Directorate of Agriculture.

11. Madras (Coimbatore)	P. Prabhakara Rao V. Venkateswara Rao	Late Shri M. Bhavani Sankar Rao, Vice-Principal and Secretary, Research Council, Agricultural College and Research Institute, Coimbatore. Shri T. Natarajan, Agronomist. Shri A.H. Sarma, Extension Specialist. Shri V. Raman, Secretary, Research Council. Shri K.R. Nagaraja Rao, Secretary, Research Council.
12. Assam (Shillong)	T.K. Gupta	Dr. S.R. Barooha, Director of Agriculture, Assam. Shri B.N. Duara, Joint Director of Agriculture, Assam.
13. Mysore (Bangalore)	K.A. Balakrishnan	Shri M.A. Wali, Director of Statistics, Shri B.V.S. Rao, Assistant Director of Statistics.
14. Kerala (Trivandrum)	V.N. Iyer	Shri M. Janardanan nair, Director of Agriculture. Shri N. Shankara Menon Director of Agriculture. Shri P.D. Nair, Director of Agriculture.

ABBREVIATIONS COMMON TO EXPERIMENTS ON ANNUAL AND PERENNIAL CROPS AND EXPERIMENTS ON CULTIVATORS' FIELDS.

Crops :- In the top left corner is given the name of the crop on which the experiment is conducted. Within brackets along side the crop is mentioned the season wherever the information is available.

Ref :- Against the sub-title 'reference' is mentioned the name of the State, the year in which the experiment is conducted and the serial number of the experiment for that year given in brackets.

Abbreviations adopted for States are as follows :—

1. A.P.—Andhra Pradesh
2. As.—Assam
3. Bh.—Bihar
4. Gj.—Gujarat
5. H.P.—Himachal Pradesh
6. J.K.—Jammu and Kashmir
7. K.—Kerala
8. M.P.—Madhya Pradesh
9. M.—Madras
10. Mh.—Maharashtra
11. Ms.—Mysore
12. Or.—Orissa
13. Pb.—Punjab
14. Rj.—Rajasthan
15. U.P.—Uttar Pradesh
16. W.B.—West Bangal

For the experiments conducted under the schemes sponsored by the Indian Concil of Agricultural Research like the Model Agronomic Experiments or the Simple Fertilizer Trials scheme no serial numbers have been given at the source as the data of these experiments were collected at the Headquarters (New Delhi). In such cases the abbreviations MAE, SFT or TCM are given in the brackets against the year in which the experiment is conducted.

Site :—Name of the Research Station is mentioned alongwith the place where it is located, e.g. Agri. Res. Stn. for Agricultural Research Station.

For Central Institutes, the corresponding standard abbreviations have been adopted e.g. I.A.R.I. for the Indian Agricultural Research Institute.

In case of the experiments conducted on cultivators' fields whether under an Indian Council of Agricultural Research scheme or by the State Government, the abbreviation (c.f.) is given along with the site or centre as, for example, Cuttack (c.f.).

Type :- Abbreviations used against this item are one or more than one of the following :—

C—Cultural ; D—Control of Diseases and Pests ; I—Irrigational ; M—Manurial ; R—Rotational ; V—Varietal and X—Mixed cropping. e.g. CM is to be read as Cultural-cum-manurial.

Object :- A statement of the objective of the experiment is given indicating the main crop and type of the experiment. In case of M.A.E., S.F.T. and T.C.M. experiments, the type to which the experiment corresponds is also given, e.g. Type V, Type A or B or C etc.

Results :- Information under this heading should be read against the following items :—

(i) General mean. (ii) S.E. per plot. (iii) Results of test of significance. (iv) Summary table(s) with S.E. of comparison(s).

Other abbreviations used in the text of experiments :

Nitro. Phos.—Nitro. Phosphate
Ammo. Phos.—Ammonium Phosphate
A/S—Ammonium Sulphate
A/S/N.—Ammonium Sulphate Nitrate
C/A/N—Calcium Ammonium Nitrate
A/N—Ammonium Nitrate
A/C—Ammonium Chloride
C/N—Chilean Nitrate
N—Nitrogen
P—Phosphate

K—Potash	F.M.—Fish Manure
B.M.—Bone meal	G.N.C.—Groundnut cake
Mur. Pot.—Muriate of Potash	M.C.—Municipal Compost
Pot. Sul.—Potassium Sulphate	T.C.—Town Compost
Super—Super Phosphate	lb.—Pounds
Zn. Sul.—Zinc Sulphate	Srs.—Seers
C/S—Copper Sulphate	B.D.—Basal dressing
G.M.—Green Manure	C.L.—Cart load
F.Y.M.—Farm Yard Manure	ac.—Acre
F.W.C.—Farm Waste Compost	Dical. Phos.—Dicalcium Phosphate

Under the item (ii) (b) of the sub-heading 'Basal conditions' in the text of the experiment, the respective farm/station at which the experiment was conducted has been referred to for the soil analysis. The soil analysis of the farm, with other details of the research station is given under the background information of each state. The information regarding the details of experimental stations may be obtained under the respective items as given below :

DETAILS OF EXPERIMENTAL STATIONS

A. General information :

(i) District and the nearest railway station with Latitude, Longitude and Altitude if available. General topography of the experimental area. (ii) Type of tract it represents. (iii) Year of establishment. (iv) Cropping pattern. (v) Programme of research.

B. Normal rainfall :

Average monthly rainfall specifying the period on which the figures are based.

C. Irrigation and drainage facilities :

(i) (a) Whether available, if so, since when. (b) Type of facilities available. (ii) Whether there is a proper drainage system.

D. Soil type and soil analysis :

(i) Broad soil type with depth, colour. and structure etc. (ii) Chemical analysis. (iii) Mechanical analysis.

E. No. of experiments :

No. of experiments conducted on different crops that have been included in the compendium.

Information under the following heads is to be read against the respective items as given below.

BASAL CONDITIONS

A. For experiments on annual crops :

(i) (a) Crop rotation if any. (b) Previous crop. (c) Manuring of previous crop. (State amount and kind). (ii) (a) Soil type. (b) Soil analysis. (iii) Date of sowing/planting. (iv) Cultural practices. (a) Preparatory cultivation. (b) Method of sowing/planting. (c) Seed-rate. (d) Spacing. (e) No. of seedlings per hole. (v) Basal manuring with time and method of application. (vi) Variety. (vii) Irrigated or Unirrigated. (viii) Post-sowing/planting cultural operations. (ix) Rainfall during crop season (x) Date of harvest.

B. For experiments on perennial crops :

(i) History of site including manuring and other operations. (ii) (a) Soil type. (b) Soil analysis. (iii) Method of propagation of plants. (iv) Variety. (v) Date and method of sowing/planting. (vi) Age of seedlings at the time of planting. (vii) Basal dressing with time and method of application. (viii) Cultural operations during the year. (ix) Inter cropping if any. (x) Irrigated or Unirrigated. (xi) Rainfall during crop season. (xii) Date of harvest.

C. For experiments on cultivators' fields :

(i) (a) Crop rotation, if any. (b) Previous crop. (c) Manuring of previous crop. (ii) Soil type in general. (iii) Basal manuring with time and method of application. (iv) Variety. (v) Cultural practices. (a) Preparatory cultivation. (b) Method of sowing. (c) Seed-rate. (d) Spacing. (e) No. of seedlings per hole. (vi) Period of sowing/planting. (vii) Irrigated or Unirrigated. (viii) Post-sowing/planting cultural operations. (ix) Rainfall during crop season. (x) Period of harvesting.

DESIGN

A. For experiments on annual crops :

(i) Abbreviations for design : C.R.D.—Completely Randomised Design. R.B.D.—Randomised Block Design , L. Sq.—Latin Square , Confd.—Confounded , Fact.—Factorial. (other designs and modifications of the above to be indicated in full.). (ii) (a) No. of plots per block. (b) Block dimensions. (iii) No. of replications. (iv) Plot size. (a) Gross. (b) Net. (v) Border or guard rows kept. (vi) Whether treatments are randomised (separately in each block).

B. For experiments on perennial crops :

(i) Abbreviations for designs : C.R.D.—Completely Randomised Design ; R.B.D.—Randomised Block Design ; L.Sq.—Latin Square ; Confd.—Confounded. (other designs and modifications of the above indicated in full). (ii) (a) No. of plots per block. (b) Block dimensions. (iii) No. of replications. (iv) No. of trees/plot. (v) Border or guard rows kept. (vi) Are treatments randomised.

C. For experiments on cultivators' fields :

(i) Method of selection of experimental sites. (ii) No. and distribution of experiments. (iii) Plot size. (a) Gross. (b) Net. (iv) Whether treatments are randomised.

GENERAL

A. For experiments on annual crops :

(i) Crop conditions during growth with date of lodging, if any. (ii) Incidence of pests and diseases with control measures taken. (iii) Quantitative observations taken. (iv) In case of repetition in successive years—(a) from what year to what year, (b) whether treatments were assigned to the same plots in the same manner every year, (c) reference to combined analysis, if any. (v) In case of repetition in other places (a) names of the places along with reference and (b) reference to combined analysis, if any. (vi) Abnormal occurrences like heavy rains, frost, storm etc., if any. (vii) Any other important information.

B. For experiments on perennial crops :

(i) Crop condition during the year. (ii) Incidence of pests and diseases with control measures taken. (iii) Quantitative observations taken. (iv) In case of repetition in successive years—(a) from what year to what year, (b) reference to combined analysis, if any. (v) Abnormal occurrences like heavy rains, frost, storm etc., if any. (vi) Any other important information.

C. For experiments on cultivators' fields :

(i) Crop condition during growth. (ii) Incidence of pests and diseases with control measures taken. (iii) Quantitative observations taken. (iv) In case of repetition in successive years, (a) from what year to what year, (b) whether treatments were assigned to the same plots in the same manner every year, (c) reference to combined analysis, if any. (v) In case of repetition in other places names of places alongwith reference. (vi) Abnormal occurrances, like heavy rains, frost, storm etc., if any. (vii) Any other important information.

TABLE OF CONVERSIONS TO METRIC UNITS

1 foot = 304.8 mm.
1 acre = 0.404606 hectare.
1 gram = 0.035274 ounce = 0.085735 tola = 0.017147 chatak
1 kg. = 2.20462 pounds = 1.07169 seers.
1 metric tone = 0.9842 ton = 26.7923 maunds.
1 maund = 0.373242 quintal = 37.3242 kg.
1 lb./ac. = 1.12085 kg./hectare.
1 md./ac. = 92.23002 kg./hectare = 0.9223 quintal/hectare.
1 ton/ac. = 2.51071 metric tones/hectare.
1 gallon (Imp.) = 4.54596 litres.

GLOSSARY OF VERNACULAR NAMES OF CROPS

Sl. No	Name of Crop	Botanical Name	Assamese	Bengali	Oriya	Telugu	Tamil	Malayalam	Kannada	Marathi	Gujarati	Hindi	Punjabi
1.	Paddy	*Oryza sativa* L.	Dhan	Dhan	Dhano	Vadlu ; Biyyamu	Nel	Nellu	Bhatta	Bhat	Dangar	Dhan, Chawal	Chaul ; Dhan
2.	Wheat	*Triticum sativum* Lamk. *Triticum aestivum* L.	Gaum ; Ghehu	Gam	Gaham	Godumalu	Kothumai	Gothambu	Godhi	Gahu	Ghahu	Gehon	Kanak
3.	Jowar	*Andropogon sorghum*	—	Jowar	Juara	Jonna	Cholam	Cholam	Jola	Jowari Jondhla	Jowari ; Juar	Jowar ; Jaur	Jowar
	Barley	*Hordeum vulgare L.*	Ja'dhan	Joba	Jaba, Barlhi or Jabadhana	Barley	Baarli arisi	Barley	Barley akki	Satu ; Jav	Jav	Jau	Jaun
5.	Maize	*Zea mays* L.	Gom dhan	Bhutta	Macca	Mokkajonna	Makkacholam	Cholam Makkacholam	Musukina Jola	Makka	Makkai	Makka	Makki ; Makayee
6.	Ragi	*Eleusine coracana* Gaertn	—	Marwa	Mandia	Ragi ; Chodi	Keppai ; Ragi Kelvargu	Muthari ; Ragi	Ragi	Nagli ; Nachni	Nagli ; Bavto	Ragi ; Mandika ; Mar wah	Mandhuka Mandhal
7.	Potato	*Solanum tuberosum* L.	Alooguti	Alu	Bilati Alu	Bangaladumpa, Urlagadda	Urulai Kizhangu	Urala kizangu	Alu gedde	Batata	Aloo ; Batata	Aaloo	Alu
8.	Cabbage	*Brassica oleracea L.* var. *capitata L.*	Bandha kabi	Bandhakapi	Bandha Kobi	L. Akugobi	Muttaikose	Muttakose	Yele kosu	Kobi	Kobij	Patgobhy	Band gobhi
9.	Cauliflower	*Brassica oleracea L.* var. *botrytis L.*	Phool Kabi	Fulkapi	Fula kobi	Poogobi	Gospoovu	Cauliflower	Hukosu	Phul kobi, Fulvar	Fulkobi ; Fulvar	Phool Gobhy	Phul gobhi
10.	Tomato	*Lycopersicum esculentum* Mill	Bilahi	Bilati begun	Bilati baigan bapatala ghant	Tomato	Thakkali	Thakkali	Tomato	Welwangi ; Tambati	Vilaiti wagan ; Tameta	Tamatter	Tamatar
11.	Onion	*Allium cepa* L.	Piyaz	Piaj	Peas, ulli	Ulli	Vengayam ; Erangayam	Ulli	Eerulli	Kanda	Dungli ; Kando	Piaz	Ganda ; Payaz
12.	Soyabean	*Glycine hispida* ; *Glycine MaxMerr.*	Garo mah	Gari kalai	Soyabin	Soyachikkudu	Soyapayaru	Soyabean	Soyabean	Soyabin	Soyabin	Soyabean or Bhat	Soyabean
13.	Bengal gram	*Cicer arietinum* L.	Butmah	Chola	Boot	Senagalu	Kadalai ; Sundal Kadalai	Kadala	Kadale	Harbara	Chana	Chana	Chhole ; Chana

GLOSSARY OF VERNACULAR NAMES OF CROPS—*contd.*

Sl. No.	Name of Crop	Botanical Name	Assamese	Bengali	Oriya	Telugu	Tamil	Malayalam	Kannada	Marathi	Gujarati	Hindi	Punjabi
14.	Black gram	*Phaseolus mungo* var. *radiatus* Linn.	Matimah	Mashkalai	Biri	Minumulu	Uzhundu	Uzhunnu	Uddu	Udid	Adad, Udad	Urd	Mash ; Urd
15.	Green gram	*Phaseolus aureus* Roxb.	Magumah	Sonamug	Mung	Pacha-pesalu	Pachaipayru; Pasipayaru	Cerupayaru; Payaru	Hesaru	Mug	Mag	Moong	Moong ; Mug
16.	Masoor	*Lens eseulenta Moench* ; *Lens culinaris Medic*	Masurmah	Musuri	Masur	Chiru-senaga	Masur Paruppu	—	Masooru-bele	Masur	Masur	Masur	Massar
17.	Pea	*Pisum sativum* L.	Motor mah	Bara matar	Matar	Bataneelu	Pattani	Pattani	Batani	Matar	Vatana	Muttar	Mattar
18.	Red gram	*Cajanus cajan* Milsp, *Cajanus indicus* sprengl.	Arhar	Arahar	Harad	Kandulu	Thuvarai	Thuvaran Payaru	Thogari	Tur	Tuver	Arhar	Harhar ; Arhar
19.	Sugarcane	*Saccharum officinarum* L.	Kuhiar	Akh	—	Cheruku	Karumbu	Karimbu	Kabbu	Oos	Sherdi	Ganna ; Kamad ; Naishakar	Kamad ; Ganna ; Eakh
20.	Cotton	*Gossypium* spp.	Kapah	Karpas, Tula	Kapa	Pratti	Paruthi	Paruthi	Hatti	Kapus	Kapas	Kapas	Kapah
21.	Castor	*Ricinus Communis* L.	Eri	Rehri	Jada	Amudalu	Amanakku	Avanakku	Haralu	Erandi	Diveli Erando	Rehri	Arind ; Harind ; Rind
22.	Groundnut	*Arachis hypogaea* L.	China badam	Cheena badam	China badam	Nela senaga ; Veru senaga	Nilakadalai	Nilakkadala	Kadale kayi	Bhuimug	Bhoising Magafali	Mungphali	Mungfali
23.	Mustard	*Brassica Juncea* Coss.	Sraiah	Rai Sarisha	Rai	Avalu	Kadugu	Kaduku	Kempu - sasive	Mohri	Rai	Rai	Rai
24.	Niger	*Guizotia abyssinica.* Cass.	Sorguja	Sargauz	Alashi	Verrinu-vvulu	Peyellu	—	Huchellu	Karale ; khursani	Ramtal	Ramtil	Ram til
25.	Gingelly	*Sesamum indicum* L. *Sesamum orientale* L.	Til	Til	Rasi	Nuvvulu	Ellu	Ellu	Yellu	Til, Tili	Tal	Til	Til
26.	Linseed	*Linum Usitatissimum* L.	Tisi	Tishi	Peshi	Avise	Alivithai	Cherucha-navithu	Agase	Javas ; Alsi	Alsi	Alsi	Alsi
27.	Chilli	*Capsicum frutescens* L.	Jalakiya	Lanka ; Marich	Lanka	Mirapakaya	Milakai	Mulaku	Menasina Kayi	Mirchi	Marcha	Lalmirch	Lal mirch
28.	Jute	*Corchorus* spp.	Marapat	Shada pat Toshsa pat	Jhota	Janumu	Chanapai	Chanambu	Senabu	Joot	Moti Chhunchh	Jute	Patsan
29.	Berseem	*Trifolium alexandrinum* L.	—	Berseem	Gini Ghasa	—	—	—	—	Bersim gavat	Barsim	Berseem	Berseem

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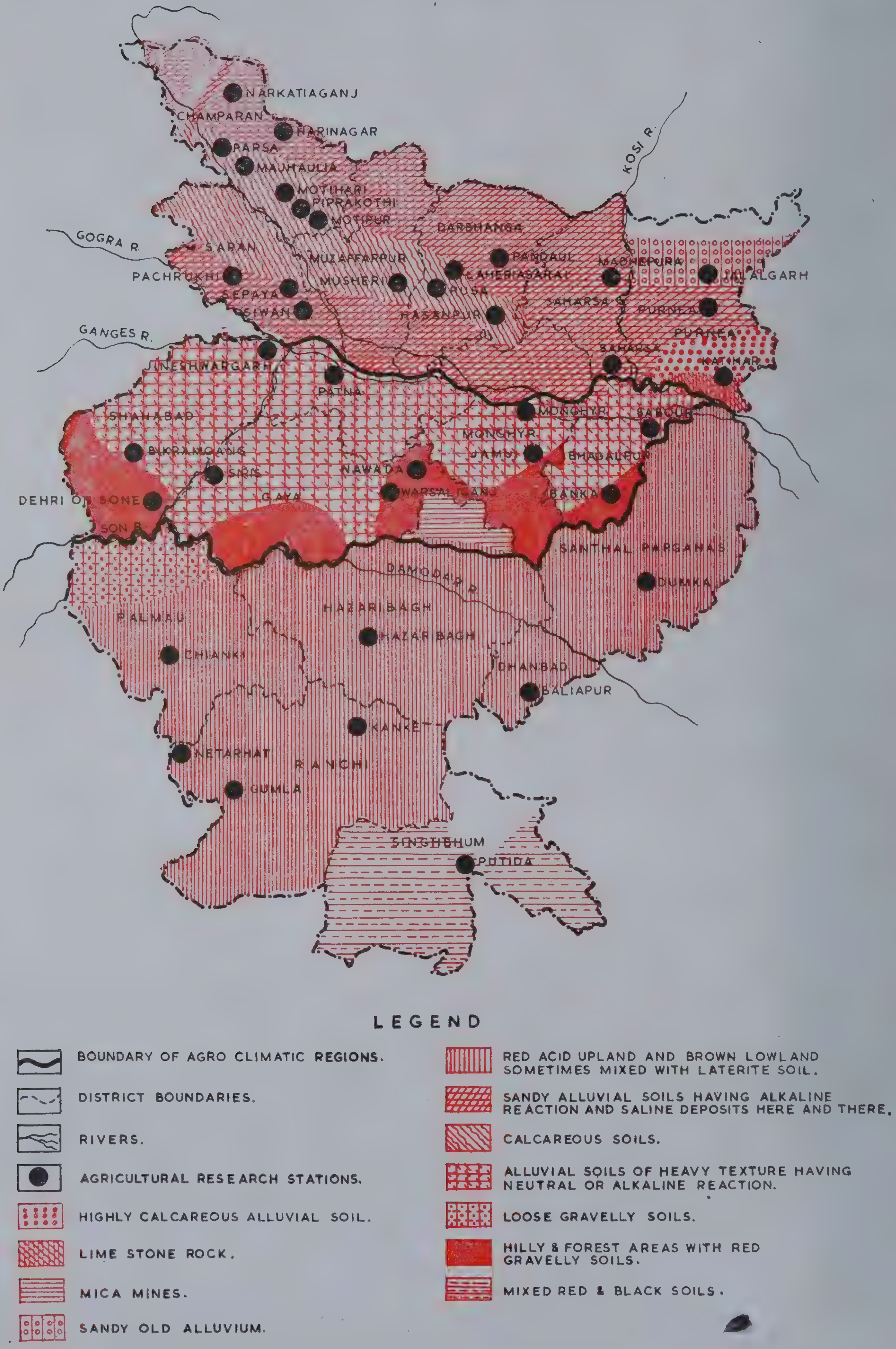
Sanai ... 925
Berseem ... 926
Mixed croping ... 929

MAP OF BIHAR STATE SHOWING AGRO-CLIMATIC REGIONS, AGRICULTURAL RESEARCH STATIONS & SOILS ETC.


NARKATIAGANJ
CHAMPARAN
HARINAGAR
RARSA
MAUHAULIA
MOTIHARI
PIPRAKOTHI
MOTIPUR
KOSI R.
DARBHANGA
GOGRA R.
SARAN
MUZAFFARPUR
PANDAUL
MADHEPURA
JALALGARH
PACHRUKHI
SEPAYA
MUSHERI
LAHERIASARAI
PUSA
SAHARSA
SIWAN
HASANPUR
PURNEA
GANGES R.
PURNEA
SAHARSA
JINESHWARGARH
KATIHAR
PATNA
MONGHYR
SABOUR
SHAHABAD
MONGHYR
BIKRAMGANJ
JAMUI
BHAGALPUR
SIRIS
NAWADA
WARSALIGANJ
BANKA
DEHRI ON SONE
GAYA
SON R.
SANTHAL PARGANAS
DAMODAR R.
DUMKA
PALMAU
HAZARIBAGH
HAZARIBAGH
CHIANKI
DHANBAD
BALIAPUR
KANKE
NETARHAT
RANCHI
GUMLA
SINGHBHUM
PUTIDA
LEGEND
BOUNDARY OF AGRO CLIMATIC REGIONS.
DISTRICT BOUNDARIES.
RIVERS.
AGRICULTURAL RESEARCH STATIONS.
HIGHLY CALCAREOUS ALLUVIAL SOIL.
LIME STONE ROCK.
MICA MINES.
SANDY OLD ALLUVIUM.
RED ACID UPLAND AND BROWN LOWLAND SOMETIMES MIXED WITH LATERITE SOIL.
SANDY ALLUVIAL SOILS HAVING ALKALINE REACTION AND SALINE DEPOSITS HERE AND THERE.
CALCAREOUS SOILS.
ALLUVIAL SOILS OF HEAVY TEXTURE HAVING NEUTRAL OR ALKALINE REACTION.
LOOSE GRAVELLY SOILS.
HILLY & FOREST AREAS WITH RED GRAVELLY SOILS.
MIXED RED & BLACK SOILS.

BIHAR

1. General :

Bihar State is surrounded by Nepal in the north, Uttar Pradesh in the west, Madhya Pradesh in the south-west, Orissa in the south and West Bengal in the east. It has an area of about 67,113 sq. miles. It is divided into 17 districts forming 4 administrative divisions. The land utilization statistics of the State are given in table 1 below :

TABLE 1

Land utilization statistics of Bihar (1958—59)
(Area in '000 acres)

1.	Total area according to village papers	42,823
2.	Forests	9,356
3.	Land put to non-agricultural uses	3,378
4.	Barren and uncultivable land	2,125
5.	Permanent pastures and other grazing lands	521
6.	Cultivable waste	2,241
7.	Fallows other than current fallows	2,100
8	Current fallows	3,412
9.	Net area sown	19,690
10.	Total cropped area	27,378
11.	Area sown more than once	7,688

2. Topography :

The State of Bihar may be divided into three regions from the point of view of the topography and distinctness of soil characteristics viz., North Bihar, South Bihar and Hilly region of South Bihar, known as Chhota Nagpur Plateau. North Bihar region lies between the *tarai* land of the Himalayas and the river Ganges. The rivers Gandak and Kosi and innumerable smaller ones divide this alluvial plain into areas of varying fertility. South Bihar comprises the older alluvial area between the Ganges in the north and hills in the south. Hilly region of South Bihar is a region of plateau and mountainous spurs which are the terminations of Satpura-Vindhya range. The terrain is broken and landscape shows alternate uplands and lowlands. The former are reddish, porous and acidic which are suitable for forests and upland crops, whereas lowlands are darker, neutral and heavier in texture with variable soil depth. The lateritic soils occur principally as capping on the higher hills and some pesolitic lateritic soils are also found in the south eastern part of Singhum district.

Soil types of different physiological and soil divisions are given below :

Soils of North Bihar : The soils of North Bihar are alluvial in origin and according to their morphological, genetic, chemical and physical characteristics these soils are differentiated into the following broad groups (i) Recent alluvium influenced by the rivers Kosi and the Mahananda occupying the areas in Purnea, Saharsa, eastern Darbhanga and eastern portion of North Monghyr and (ii) Young alluvium. The soils of recent alluvium are light coloured, light textured, non-calcarious and generally neutral in reaction except the northern portion where the soils are acidic. The young alluvium have further been divided into (a) Non-calcareous slightly acidic to moderately acidic alluvium occupying the *tarai* area of the Himalayas (b) Calcarious alluvium occupying southern portion of Champaran, Muzaffarpur, portions of western Darbhanga and eastern half of Saran district (c) Saline calcarious occupying the western portion of the Saran district contiguous to the eastern boundaries of U.P. These soils are light to dark coloured and of various fertility status.

South Bihar Plain Division **:** The soils of this division are of alluvial origin except in the southern parts of Shahabad, Gaya and Monghyr distiets where they have been formed from Vindhyan, Dharwar and Gneiss rocks. Shahabad and Patna soils appear to be of similar composition to those of Bhagalpur soils. Patna soils are more clayey. The soils of Shahabad are heavy clays, with patches of black soils which crack on drying. Fertile patches of usar lands are found in the west and central portions of the State. In the south of the districts mentioned above, the soils are characterised by having a definitely low pH, ranging from 4.7 to 6.8, the southern most districts showing the most acid reaction. Low contents of available phosphoric acid and potash and of lime are common features of the soils. The eastern portion covering the south of Kharagpur Hills is sandy, having somewhat rocky subsoils. The area between the Kiul and the Sakri rivers contains stiff clayey soils with sandy sub soil. Beyond the Sakri, the soils are again of a light texture and as we proceed west, the sub soils become harder. In the area between Wazirganj and the Phalgu river, both the surface and subsoils are of stiff clay. The heavy clay soils between Wazirganj and the Phalgu get a further deposit from the Paimer which has a bed of clay.

Chhota Nagpur Division **:** The soils of this region are of sedentary character. Upland soils are reddish and acidic, while lowland soils are dark, neutral and clayey. A large variety of soils is met with, in every district. The principal types are (1) Loam (Doras) (2) Red Ferruginous gravel (3) Hard clay (4) Calcarious soil (5) Sandy soil and (6) Whitish clay. Reddish gravel is most common to all. Good clay soils containing rich alluvium and rich organic matter are found in depressions. Loamy soils are met with near hills and sandy soils in the vicinity of rivers. Calcareous soils exist mainly in Palamau, but small patches may be found in other districts also. Whitish clay is scattered in patches all over the division.

3. Irrigation and rainfall :

The state has a total irrigated area of about 5,090 thousand acres which accounts for about 11.09 % of the total area. The extent of area irrigated through different sources is given in table 2 below :

TABLE 2

Area irrigated through different sources (1958-59)

(Area in '000 acres)

Source	Acreage	% of total irrigated area
1. Government canals	1071	21.0
2. Private canals	363	7.1
3. Tanks	1024	20.1
4. Wells	681	13.4
5. Other sources	1951	38.3
	5090	100.0

The normal rainfall ranges from 50 to 75 inches received mostly during the monsoon period.

4. Agricultural Production and Normal Cropping Pattern :

Rice is the most important crop in the state covering more than 50% of cultivated area. Other important crops of the state are maize, wheat, sugarcane, pulses like gram and tur and fibre crops like jute and mesta. The following table gives the area, production and yield per acre of principal crops in the state during 1963-64.

TABLE 3

Area, production and average yield per acre of principal crops (1963-64)

Crop	Area in '000 acres	Production in '000 tons	Av. yield in lb./ac.
Paddy	13,134	4,462	761
Wheat	1,685	336	447
Jowar	20	4	448
Bajra	43	9	469
Maize	1,961	897	1,025
Ragi	456	109	535
Barley	911	158	388
Small millets	534	97	407
Gram	1,247	239	429
Tur	436	112	575
Other pulses	3,684	834	507
Sugarcane	343	5,093	14.85(a)
Cotton	5	1*	78
Jute	482	942**	782
Mesta	160	317**	792

(a) Tons/ac.
*Bales of 392 lb. each.
**Bales of 400 lb. each.

5. Experimentation and Agricultural Research :

There are 1192 experiments conducted at agricultural research stations in the Bihar State during the period 1954—1959. The break up of these experiments crop-wise and type-wise is given in the table 4.

Besides these, a number of experiments conducted by the Field Experiments Specialist in Bihar and the Model Agronomic experiments and Simple Fertilizer Trials of the Indian Council of Agricultural Research are also included in the compendium. Agricultural Research Institutes at Sabour, Kanke and Patna, Sugarcane Research Station at Pusa are the centres where a good number of experimens are conducted. Sugarcane, paddy, wheat and maize are the principal crops on which large number of experiments are reported, accounting for 24, 23, 18.8 and 10.3 per cent respectively. Nearly 60 per cent of the experiments are of purely manurial type. Cultural experiments account for nearly 18 per cent. A little over 73 per cent of the experiments are laid out in randomised blocks while split-plot and confounded designs are adopted in the case of about 15 and 11 per cent of the experiments respectively.

The number of replications varies from 1 to 8 while the area of net plot varies from about 3 sq. yds. to 525 sq. yds.

The maximum number of plots taken in a block is 24 in the case of R.B.D. and 16 sub-plots in a main-plot in the case of a split-plot design.

A note on experiments conducted by the Field Experiments Specialist on Cultivators' Fields in Bihar.

These experiments on the cultivators' fields are conducted in Bihar State through the agency of Field Assistant specially appointed for the prupose. The entire State is divided into a number of blocks with a Field Assistant posted in each block. Experiments are conducted on all major crops grown in the villages covered by the block. The present volume of the compendium includes experiments on crops like paddy, wheat, maize, marua, potato and gram conducted on cultivators' fields in the State.

TABLE 4

Distribution of experiments crop-wise and type-wise

Crop	M	MV	C	CV	CM	CMV	I	D	X	Total
Paddy	157	2	43	26	22	3	11	10	—	274
Wheat	144	—	46	8	3	—	14	9	—	224
Jowar	6	—	—	—	—	—	—	—	—	6
Barley	1	—	—	—	—	—	6	1	—	8
Maize	45	—	61	—	4	1	2	10	—	123
Marua	8	—	8	—	3	—	—	—	—	19
Cheena	1	—	1	—	—	—	—	—	—	2
Gundli	5	—	—	—	3	—	—	—	—	8
Potato	10	—	4	2	—	—	6	3	—	25
Cabbage	7	—	—	—	—	—	—	—	—	7
Cauliflower	7	—	—	—	—	—	—	—	—	7
Tomato	6	—	—	—	—	—	—	—	—	6
Onion	8	—	—	—	—	—	—	—	—	8
Soyabean	4	—	—	—	—	—	—	—	—	4
Gram	38	—	3	—	—	—	—	12	—	53
Khesari	—	—	—	—	—	—	—	4	—	4
Kalai	9	—	—	—	—	—	—	5	—	14
Moong	1	—	—	—	—	—	—	4	—	5
Arhar	1	—	—	—	—	—	—	2	—	3
Pea	1	—	—	—	—	—	—	6	—	7
Rahar	1	—	—	—	—	—	—	—	—	1
Sugarcane	199	3	20	9	—	—	47	8	—	286
Cotton	1	—	—	—	—	—	—	—	—	1
Castor	11	—	—	—	—	—	—	—	—	11
Groundnut	8	—	3	—	10	—	—	2	—	23
Niger	1	—	—	—	—	—	—	—	—	1
Til	10	—	8	—	—	—	—	—	—	18
Linseed	—	—	—	—	—	—	—	1	—	1
Chillies	5	—	—	—	—	—	—	—	—	5
Jute	1	—	7	—	—	—	—	—	—	8
Jowar fodder	9	2	7	—	—	—	—	—	—	18
Sanai	1	—	1	—	—	—	—	—	—	2
Berseem	—	—	—	—	4	—	—	—	—	4
Total	706	7	212	45	49	4	86	77	6	1,192

The field Assistants are supplied with a list of villages randomly selected corresponding to the crops grown in their blocks. They are also supplied with a list of crops on which they are to conduct these experiments for each crop season. For selecting sites, they are required to prepare a list of fields which are likely to grow the particular crop in the season and final selection of site is made from the above list by the random methods. The treatments are then allotted randomly to plots in the fields.

During 1953—56, six types of experiments were laid out wherein Nitrogen, Phosphorus and Potassium were tried each at two levels. In 1956, 3 experiments with 3 levels of each of Nitrogen, Phosphorus and Potassium were introduced in which higher order interactions were partially confounded with blocks. The three blocks were placed in three different fields and one additional 'no manure' plot was included in each block. Thus the block size was raised from 9 to 10. The idea of having an additional 'no manure' plot was mainly to demonstrate the cultivators how the treated plots compared to 'no manure' plot in response and yield.

Prior to 1956, the plot sizes used were 1/10th of an acre in case of sugarcane and maize 1/20th of an acre in case of other crops but in subsequent years the plot size was reduced to 1/40th of an acre.

PARTICULARS OF RESEARCH STATIONS AND SOIL ANALYSIS

1. District Agricultural Farm, Baliapur.

A. General information :

(i) In Dhanbad district. An upland area. (ii) Hilly tract. (iii) Established in 1957. (iv) Paddy—wheat—fallow and paddy—fallow are the normal rotations in the tract. (v) N.A.

B. Normal rainfall in mm.

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	Total
76.2	228.6	254.0	101.6	—	—	—	—	—	12.2	—	38.4	711.0

(The av. figure is based on the period 1957 to 1960).

C. Irrigation and drainage facilities :

(i) (a) Irrigation facilities are available from 1957. (b) From tank. (ii) Drainage facilities are not available.

D. Soil type and soil analysis :

(i) Sandy to a depth of 6″ with light red colour. (ii) Chemical analysis and (iii) Mechanical analysis—N.A.

E. No. of experiments :

Paddy—5, Total=5.

2. Government Agricultural Farm, Banka.

A. General information :

(i) Bhagalpur district, about 6 miles from Barahat Railway Station. (ii) to (v) N.A.

B. Normal rainfall and *C. Irrigation and drainage facilities :*

N.A.

D. Soil type and soil analysis :

(i) Heavy clayey soil. (ii) Chemical analysis and (iii) Mechanical analysis—N.A.

E. No. of experiments :

Paddy—6, Wheat—5. Total=11.

3. Botanical Sub-Stn, Dhangain (BKJ).

A. General Information :

(i) In Shahabad district. The nearest Railway Station—2 miles, Bikramganj. There is a difference of about 10′ to 15′ in the levels between the lowest and the highest plots. (ii) Paddy tract. (iii) Established in 1924. (iv) Paddy—wheat and gram is the normal rotation in the tract. (v) Breeding of paddy is the programme of research.

B. Normal rainfall in mm. :

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	Total
100.5	315.7	272.3	199.8	56.5	4.5	0.8	29.3	3.8	13.5	28.9	5.0	1030.6

(Ten years' average).

C. Irrigation and drainage facilities :

(i) (a) Irrigation facilities are available from 1924. (b) From Canal. (ii) Natural drainage system is available there.

D. *Soil type and soil analysis* :

(i) Sandy with light grey and light yellow and of blocky structure. (ii) Chemical analysis of soil : pH 7.2, total N 0.06%, total P_2O_5 0.08 to 0.11%, total K_2O 0.27 to 0.41%, Organic Carbon 0.63%. (iii) Mechanical analysis : Coarse sand 18.95%, fine sand 42.91%, silt 15.54%, clay 20.86%. Texture : Sandy clay loam.

E. *No. of experiments* :

Paddy—30, Wheat—1, Mixed cropping—1. Total=32.

4. Irrigation Research Station, Bikramganj (Shahabad).

A. *General information* :

(i) In Shahabad district. Latitude 25.1° N, Longitude 84.3° E, Altitude 290 ft. Almost Plain, natural slope from north-east to south-west. (ii) Paddy tract. (iii) Established in 1959. (iv) G.M.—paddy—wheat—barley—potato H.W. maize and G.M.—paddy—sugarcane are the normal cropping pattern. (v) Irrigational trials on all crops.

B. *Normal rainfall in mm.* :

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	Total
35.1	279.4	234.2	76.5	175.8	—	—	4.3	—	60.5	—	18.3	884.1

(The av. figures are based on the period 1959 to 1960).

C. *Irrigation and drainage facilities* :

(i) (a) Irrigational facilities are available since establishment and (b) from Bhojpur distributory canal. (ii) Natural drainage system exists.

D. *Soil type and soil analysis* .

(i) Alluvium to a sufficient depth with yellowish grey followed by black grey colour. (ii) Chemical analysis : Total N 0.04 to 0.05%, Organic Carbon 0.42 to 0.51%, pH 6.8—7.2. (iii) Mechanical analysis : Coarse sand 8.8%, Fine sand 51.35%, Silt 36.2%, Clay 13.65%, Texture—Sandy loam

E. *No. of experiments* :

Paddy—8, Wheat—5, Barley—3, Potato—2, Sugarcane—1. Total=19.

5. Citrus Research Station, Chianki.

A. *General information* :

(i) In the district of Palamaue. Altitude 1350′. The area of the Research Station is about 15.6 acres. (ii) It represents well drained clayey soil with gravel. (iii) Established in 1953. (iv) In upland citrus orchards only and in the low lands—paddy—wheat is the normal rotation. (v) Manurial and cultural trials on citrus, manurial trials on cabbage, tomato, cauliflower, onion, paddy and varietal trial on wheat are the main items in the programme of research.

B. *Normal rainfall in mm.* :

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	Total
131.6	530.9	359.3	268.1	83.8	2.0	9.4	60.2	13.1	6.7	8.1	24.9	1498.1

(Av. figures are based on the period from 1956 to 1959).

C. *Irrigation and drainage facilities* :

(i) (a) Irrigation facilities are available from 1953. (b) From wells. (ii) No drainage facilities.

D. *Soil type and soil analysis* :

(i) Clayey to a depth of 1 ft. to 5 ft. with black colour. (ii) Chemical analysis and (iii) Mechanical analysis— N.A.

E. No. of experiments :

Paddy—3, Wheat—5, Maize—2. Total=10.

6. Soil Conservation Research Demonstration and Training Centre, Chatra (Nepal).

A. General information :

(i) In Morong district (Nepal). Latitude—26° 49′43″ N. Longitude—87° 8′34″ E and Altitude—116.5 metres. Generally sloping from north to south. Slope starts from the foot hills and gradually merges with the plain of *tarai* of Nepal. (ii) Bhabari tract—Foot hills of the outer Himalayas. (iii) Established in 1957 (June). (iv) Maize—fallow—*toria* is the normal rotation in the tract. (v) Soil conservation, engineering forestry and agronomy are the items in the programme of research.

B. Normal rainfall in mm. :

N.A.

C. Irrigation and drainage facilities :

(i) (a) and (b) Nil. (ii) Natural drainage system exists.

D. Soil type and soil analysis :

(i) Sandy to a depth of 9″ to 36″ with gray colour. (ii) Chemical analysis : pH 6.8 ; % of N—0.111 ; % of P_2O_5—0.161 ; % of K_2O—0.031 ; Organic Carbon—1.392, TEC—13.73 and Ca—10.38. (iii) Mechanical analysis—N.A.

E. No. of experiments :

Maize—1. Total=1.

7. Zonal Centre, Deri-on-Sone (Shahabad).

A. General information to D. Soil type and soil analysis :

Information—N.A.

E. No. of experiments :

Sugarcane—5. Total=5.

8. Botanical Sub-Station, Dumka.

A. General information :

(i) In Dumka district (S.P). Deogarhi is the nearest Railway Station. (ii) to (v) Information is not available.

B. Normal rainfall in mm. and *C. Irrigation and drainage facilities :*

Information—N.A.

D. Soil type and soil analysis :

(i) Clayey. (ii) Chemical analysis and (iii) Mechanical analysis—N.A.

E. No. of experiments :

Paddy—5, Castor—4, Groundnut—7, Til—6. Total=22.

9. Naya Dumka Farm, Dumka.

A. General information :

(i) In Dumka district (S.P.). Latitude—24.3° N and Altitude—497′. (ii) Red laterite. (iii) Established in 1952. (iv) Paddy—wheat is the normal rotation in the tract. (v) Programme of research—N.A.

B. Normal rainfall in mm. :

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	Total
89.4	227.1	469.1	184.2	143.5	—	—	53.1	0.3	7.6	87.6	43.9	1305.8

(Av. figures are based on the period from June, 1948 to May, 1959).

C. Irrigation and drainage facilities :

(i) (a) From 1952. (b) From Bundh. (ii) No drainage facilities.

D. Soil type and soil analysis :

(i) to (iii) N.A.

E. No. of experiments :

Paddy—12, Wheat—9, Maize—3, *Kalai*—1. Total=25.

10. Government Agricultural Farm, Gumla (Ranchi).

A. General information to *D. Soil type and soil analysis :*

Information—N.A.

E. No. of experiments :

Paddy—4, Wheat—3. Total=7.

11. Zonal Centre, Harinagar (Champaran).

A. General information to *D. Soil type and soil analysis :*

Information—N.A.

E. No. of experiments :

Sugarcane—19. Total=19.

12. Zonal Centre, Hasanpur (Darbhanga).

A. General information to *D. Soil type and soil analysis :*

Information—N.A.

E. No. of experiments :

Sugarcane—3. Total=3.

13. District Experimental Farm, Hazaribagh.

A. General information :

(i) In Hazaribagh district. It consists of up, medium and low land. (ii) Typical Chhotanagpur land. (iii) Established in 1957. (iv) (a) Paddy—fallow, (b) Kalai—fallow and (c) Groundnut—fallow are the normal rotations in the tract. (v) Experiments on all aspects of agronomy are conducted in the farm.

B. Normal rainfall in mm. :

N.A.

C. Irrigation and drainage facilities :

(i) (a) From 1959. (b) Form well. (c) No proper drainage system exists.

D. Soil type and soil analysis :

(i) Clay and clay loam. (ii) Chemical analysis and (iii) Mechanical analysis—N.A.

E. No. of experiments :

Paddy—4. Total=4.

14. Soil Conservation Research Station, Jalalgarh.

A. General information :

(i) In Purnea district one mile from Jalalgarh Railway Station. The Research Station is a highland having depression on both east and west side of the farm. There are 7.5 acres of land dug inside the farm and other portion of the farm are nearly level with 1-2 ft. depression here and there. (ii) Sandy alluvials. (iii) Established in 1959. (iv) (a) Jute—fallow or jute—*tori* (2 years). (b) Maize+*rahar* -*rahar*—maize+groundnut—*tori* (2 yeras) and (c) Jute+*rahar*—*rahar*—jute—*rahar* (2 years) are the normal rotations of crop in the tract. (v) (a) Soil loss due to wind erosion. (b) Manurial experiments and (c) Study of suitability of different grasses and legumes on sandy soil.

B. Normal rainfall in mm. :

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	Total
185.0	317.1	390.5	202.0	75.0	—	—	—	0.8	41.1	88.8	211.1	1511.4

(Based on 2 years data from 1962 to 1963).

C. Irrigation and drainage facilities :

(i) (a) and (b) N.A. (ii) Natural drainage exits.

D. Soil type and soil analysis :

(i) Single grained, loose non-stick and non-plastic to a depth of 6″—18″ with brownish white to dirty white colour. (ii) Chemical analysis : pH acidic (5.2 to 5.8), carbon 0.2 to 0.8%. (ii) Mechanical analysis—N.A.

E. No. of experiments :

Kalai—1, Groundnut—2. Total=3.

15. Government Experimental Farm, Jamui.

A. General information :

(i) In Monghyr district, 1/4 mile from Jamui Railway Station. Slopy land. (b) A hilly tract. (c) Established in 1922. (iv) (a) Early paddy—wheat. (ii) Paddy—pea—gram. (iii) Maize and *kalai*—wheat. (iv) *Guar*—wheat are the normal rotation of crops in the tract. (v) N.A.

B. Normal rainfall in mm. :

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	Total
181.0	196.1	475.5	260.0	95.8	—	—	—	—	—	—	106.7	1315.1

C. Irrigation and drainage facilities :

(i) (a) and (b) N.A. (ii) No proper drainage facilities exist.

D. Soil type and soil analysis :

(i) Heavy calcarious soil to a depth of 3′ with black colour. (ii) Chemical analysis and (iii) Mechanical analysis—N.A.

E. No. of experiments :

Wheat—3. Total=3.

16. Zonal centre, Jineshwargarh (Patna).

A. General information to D. Soil type and soil analysis :

Information—N.A.

E. No. of experiments :

Sugarcane—11. Total=11.

17. Agricultural Research Institute, Kanke.

A. General information :

(i) In Ranchi district, 8 miles from Ranchi Railway Station. The land surface is rugged and uneven ranging from flat land to steep slopes. For cultivation purpose they are distributed as terraced lands, uplands at the top, medium and low lands at the lowest slope. (ii) Chhota Nagpur plateau area about 2500 ft. above the sea level. (iii) Established in 1955. Experimental farm was established in 1914—1915. (iv) Uplands—aus paddy or gora paddy or maize or *guar* followed by fallow or gram or peas. Groundnut—cotton—fallow, Paddy—fallow and Paddy—Berseem are the normal rotation of crops. (v) Manurial and cultural trials and diary, poultry and bee keeping etc. are the programme of research.

B. Normal rainfall in mm. :

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	Total
166.1	320.1	287.1	238.4	129.2	1.0	3.2	12.4	38.8	11.9	22.3	35.4	1265.9

(Av. figures are based on a period from 1956 to 62).

C. Irrigation and drainage facilities :

(i) (a) Facilities available from 1957 and (b) N.A. (ii) Natural drainage system exists.

D. Soil type and soil analysis :

(i) The uplands are sandy loam and reddish in colour and lowlands are clayey and rather dark in colour. (ii) Chemical analysis : Fertility status of an upland and lowland soil in Chhota Nagpur.

soil	C.E.C. me/100 gm.	Org. C %	Org. N %	CaO %	MgO %	K_2O %	available P_2O_5 %	available K_2O %	pH
Uplands	8.50	0.50	0.05	0.10	0.25	0.10	0.002	0.010	6.0
Lowlands	12.50	0.75	0.075	0.20	0.50	0 40	0.005	0.015	7.0

(iii) Mechanical analysis—N.A.

E. No. of experiments :

Paddy—29, Wheat—28, Barley—1, Maize—27, *Marua*—8, *Gundli*—7, Potato—4, Soyabean—1, Gram—5, Cotton—1, *Kalai*—1, *Moong*—1, *Masoor*—1, Pea—1, *Rahar*—1, Groundnut—3, *Til*—1. Total=120.

18. Botanical Sub-Station, Kanke.

A. General information :

(i) In Ranchi district, 9 miles from Ranchi Railway Station. Latitude—23° 23′ N. Longitude—85°20′ E. Altitude—2050′. An uneven and undulating land. (ii) Red soil zone tract. (iii) Established in 1954. (iv) Rice—G.M. and Pea—gram—wheat/fallow are normal cropping pattern in the tract. (v) Programme of research—N.A.

B. Normal rainfall in mm. :

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	Total
204.7	346.5	359.9	274.8	62.7	32.4	2.7	24.4	20.7	29.4	26.2	63.9	1448 3

(The av. figures are based on the period 1948 to 1953).

C. Irrigation and drainage facilities :

(i) No proper irrigation facilities exist. (ii) Tile drainage in about 20 acres exists.

D. Soil type and soil analysis :

(i) Red loam to a depth of 10′ to 15′ with light brick red to reddish yellow colour. (ii) Chemical analysis and (iii) Mechanical analysis—N.A.

E. No. of experiments :

Paddy—25, Groundnut—3. Total=28.

19. Jute Research Station, Katihar.

A. General information :

(i) In Purnea district, 3 miles from Katihar Railway Station. It has got upland and lowland areas. The upland area covers 65 % of the farm and free from water logging. The total acrerage of the station is near about 54 acres. (ii) Sandy loam tract of post-kosi soils. (iii) Established in 1962. (iv) Jute or mesta during *kharif* followed by any *rabi* crop. (v) Varietal, manurial and other associated trials on jute and mesta.

B. Normal rainfall in mm. :

N.A.

C. Irrigation and drainage facilities :

(i) (a) and (b) Nil. (ii) Drainage in upland through eastern channels.

D. Soil type and soil analysis :

(i) Sandy loam and loam. (ii) Chemical analysis and (iii) Mechanical analysis—N.A.

E. No. of experiments :

Jute—8. Total=8.

20. District Agricultural Farm, Lehrisarai (Dharbhanga).

A. General information to D. Soil type and soil analysis :

Information—N.A.

E. No. of experiments :

Paddy—2, Wheat—2. Total=4.

21. Irrigation Research Station, Madhipura.

A. General information :

(i) In Saharsa district, 3 miles from Dauram Madhipura Railway Station. Topography of the experimental area of this research farm is generally even. (ii) Sandy tract typical of Kosi command area. Surface soil is pre dominent by sandy to sandy loam undertain by sandy sub-soil. (iii) Established in October, 1957. (iv) (1) Early Jute—late paddy (2) Marua—late paddy—paira. (3) Green manure—late paddy—*mung*. (4) Late Jute—wheat. (5) Maize+*kalai*—Potato. (6) Paddy—barley—oheena. (7) Hot weather maize—paddy—*mung*. (8) Maize—mustard are the normal rotations of crops in the tract. (v) All kinds of agronomical and manurial trials are carried out in the farm.

B. Normal rainfall in mm. :

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	Total
166.6	223.8	308.4	326.1	173.0	5.1	1.3	16.8	4.8	13.5	22.6	99.1	1361.1

(Each figure is based on a period of six years data 1958—1963).

C. Irrigation and drainage facilities :

(i) (a) From 1958 and (b) Pumping set from "Gomati Dhar" and 4″ tube wells. (ii) Natural system of drainage exists.

D. Soil type and soil analysis :

(i) Sand, Loamy—Sand, Sandy—Loam, Loam—Silt—Loam to a depth of 6″—10″, 6″—8″, 0″ to 7″, 0″ to 4″, 0″ to 6″ with colour whitish grey, — grey and slightly deep brown and slightly grey.

(ii) Chemical analysis :

	pH	% $CaCO_3$	% Org. Carbon	T.S.S. in m. mhos.
Sand	6.65	0.930	0.307	0.4
Loamy sand	6.3—6.7	0.540—1.010	0.380—0 512	0.2—0.5
Sandy loam	6.3	0.562	0.118	0.2
Loam	6.3—6.9	0.133—0.826	1.019—1.042	0.5—1.17

(iii) Mechanical analysis—N.A.

E. No. of experiments :

Paddy—3, Wheat—6, Barley—3, Maize—2, Potato—4, Sugarcane—2. Total=20.

22. Zonal Centre, Majhaulia. (Champaran).

A. General information to *C. Irrigation and drainage facilities* :

Information—N.A.

D. Soil type and soil analysis :

(i) Alluvial calcareous. (ii) Chemical analysis and (iii) Mechanical analysis—N.A.

E. No. of experiments :

Sugarcane—17. Total=17.

23. Botatinal Sub-Stn, Monghyr.

A. General information :

(i) In Monghyr district, 2 miles from Purabsarai Railway Station. Almost plain, a few plots having elevated portions. (ii) A sub-hilly tract. (iii) Established in 1952. (iv) (a) *Kharif* pulses—fallow—*kharif* pulses. (b) Maize or *jowar—rabi* pulses—maize etc. (v) Varietal trials on pulses are the programme of research.

B. Normal rainfall in mm. :

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	Total
116.3	137.2	197.6	193.0	46.5	—	0.5	0.3	—	8.6	12.7	95.5	808.2

(Av. based on the period 1962—63).

C. Irrigation and drainage facilities :

(i) (a) and (b) N.A. (ii) No proper drainage exists.

D. Soil type and soil analysis :

(i) Sandy loam to a depth of 6″ to 10″ with normal soil lower. (ii) Chemical analysis and (iii) Mechanical analysis—N.A.

E. No. of experiments :

Maize—8, Gram—1, *Kalai*—1, *Moong*—1, Pea—1, Castor—1. Total=13.

24. District Agricultural Farm, Monghyr. (Monghyr).

A. General informatian to *C. Irrigation and drainage facilities* :

Information—N.A.

D. Soil type and soil analysis :

(i) Red loam. (ii) Chemical analysis and (iii) Mechanical analysis—N.A.

E. No. of experiments :

Wheat—1, *Jowar*—2, *Jowar* fodder—6. Total=9.

25. Zonal Centre, Motihari. (Champaran).

A. General information to *C. Irrigation and drainage facilities* :

Information—N.A.

D. Soil type and soil analysis :

(i) Sandy loam ; calcareous. (ii) Chemical analysis and (iii) Mechanical analysis—N.A.

E. No. of experiments :

Sugarcane—17. Total=17.

26. Zonal Centre Motipur. (Champaran).

A. General information to *C. Irrigation and drainage facilities* :

Information—N.A.

D. Soil type and soil analysis :

(i) Sandy loam. (ii) Chemical analysis and (iii) Mechanical analysis—N.A.

E. No. of experiments :

Sugarcane—14. Total=14.

27. Government Agricultural Farm, Musheri.

A. General information :

(i) In Muzaffarpur district, 6 miles from Muzaffarpur Railway Station. A plain topography it represents. (ii) It represents sandy loam tract. (iii) Established in 1955. (iv) Sugarcane—G.M —wheat—maize is the normal rotation of crop in the tract. (v) Programme of research is to see the best and economical method of cultivation of different crops.

B. Normal rainfall in mm. :

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	Total
147.6	288.0	317.8	272.8	95.3	7.9	4.1	29.7	4.3	10.4	14.5	35.1	1227.5

(The av. figure is based on the period 1953—62).

C. Irrigation and drainage facilities :

(i) (a) From 1955 and (b) from 6″ boring. (ii) Proper drainage facilities exist.

D. Soil type and soil analysis :

(i) Sandy loam to a depth of 8″ with grey colour. (ii) Chemical analysis and (iii) Mechanical analysis—N A.

E. No. of experiments :

Paddy—1, Wheat—16, Maize—16, Gram—5, Pea—1, Linseed—1, *Jowar* fodder—3. Total=43.

28. Zonal Centre, Narkatiaganj. (Champaran).

A. General information to *D. Soil type and soil analysis* :

Information—N.A.

E. No. of experiments :

Sugarcane—18. Total=18.

29. Government Agricultural Farm, Nawadha.

A. General information :

(i) In Gaya district, 2 miles from Nawadah Railway Station. An undulated land. (ii) A hilly tract. (iii) Established in 1923—24. (iv) N.A. (v) All kinds of agronomical and varietal experiments are conducted.

B. Normal rainfall in mm..

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	Total
106.4	279.8	326.0	207.0	288.7	—	2.10	38.2	9.4	13.8	8.4	8.8	1307.5

(The Av. figure based on the period 1959—62).

C. Irrigation and drainage facilities :

(i) (a) From beginning of the farm and (b) From tanks and wells by means of *rehat* pump and electric pump. (ii) Natural drainage system exists.

D. Soil type and soil analysis :

(i) Clayey, loamy and sandy loam to a depth of 6″ to 9″ with brown and black colour. (ii) Chemical analysis and (iii) Mechanical analysis—N.A.

E. No. of experiments :

Paddy—4, Wheat—15, *Marua*—5, Potato—2, Onion—1, Gram—5, Groundnut—1. Total=33.

30. Government Agricultural Fram, Netarhat.

A. General information :

(i) In Palamaue district, 53 miles from Lohardaga Railway Station. Latitude—23°.29′ N. Longitude—84° 15′ E. and Altitude—3651 ft. General topography—Rolling country average 5 to 7 % slope. Bench and contour terraced. (ii) Eastern tringe of the Vindhya Range Gondiwana tract. (iii) Established in 1921. (iv) Early paddy—oats and pea (for fodder) Maize—wheat or oats and pea (fodder), *kharif* vegetables—*rabi* vegetables are the normal, rotation of crops in the tract. (v) Programme of research—N.A.

B. Normal rainfall in mm. :

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	Total
174.2	429.2	469.1	338.8	87.4	15.4	13.7	26.0	24.3	38.3	21.5	24.8	1662.7

(The Av. figure is based on the period 1953—63).

C. Irrigation and drainage facilities :

(i) (a) N.A. (b) From perennial percolation water in the Ghaghri Nala. (ii) No proper drainage exists.

D. Soil type and soil analysis :

(i) Porous to a depth of 1′ to 2½′ with red colour. (ii) Chemical analysis and (iii) Mechanical analysis—N.A.

E. No. of experiments :

Paddy—5, Maize—5, *Gundli*—1, Potato—4, *Lahi*—1. Total=16.

31. Zonal Centre, Pachrukhi. (Saran).

A. General information to D. Soil type and soil analysis :

Information—N.A.

E. No. of experiments :

Sugarcane—19. Total=19.

32. Zonal Centre, Pandual. (Darbangha).

A. General information to *D. Soil type and soil analysis*

Information—N.A.

E. No. of experiments :

Sugarcane—4. Total=4.

33. Zonal Centre, Parsa. (Champaran).

A. General information to *D. Soil type and soil analysis* :

Information—N.A.

E. No. of experiments :

Sugarcane—8. Total=8.

34. Agricultural Research Institute, Patna.

A. General information :

(i) In Patna district, ½ mile from Patna Ralway Station. Plain having general slope from North to South. (ii) Gangetic Alluvium—Heavy clay tract. (iii) Established in 1932. (iv) Paddy—sugarcane—G.M.—paddy and paddy—paira gram/wheat/barley are the normal rotation of crop in the tract. (v) All kinds of agronomical and varietal trials are conducted in the farm.

B. Normal rainfall in mm. :

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	Total
115.6	241.3	264.4	211.8	64.5	6.4	3.3	18.0	9.9	7.1	11.4	17.7	971.4

(Av. rainfall based on the period 1953—62).

C. Irrigation and drainage factilies :

(i) (a) From 1932. (b) From electric and fuel engine and pumping set. (ii) No proper drainage facilities exist.

D. Soil type and soil analysis :

(i) Single grained—clay to very heavy clay to a depth of 6 ft. with dark grey to black colour.

(ii) Chemical analysis :

	%		%		
Org.	0.30 —1.04	Total K_2O	0.763—1.800	C/N ratio	7.9—1.15
$CaCO_3$	1.02	Available K_2O	0.009—0.140	pH	7.0—8.0
Soluble salt	0.14 —0.16	Total P_2O_5	0.06 —0.10		
Org. N_2	0.051—0.085	Available P_2O_5	0.01 —0.02		
		CaO	0.75		
		Mg.	0.60		
		$Fe_2 O_3$	4.79		

(iii) Mechanical analysis :

	%
Sand	19.65
Silt	31.40
Clay	48.95

Apparent density—1.02.

E. No. of experiments :

Paddy—31, Wheat—17, Potato—2, Gram—9, Sugarcane—2. Total=61.

35. Botanical Sub-Station, Patna.

A. General information :

(i) Patna district, ½ mile away from the Patna Railway Station. (ii) N.A. (iii) Established in 1932. (iv) Paddy is the main crop. (v) Agronomic and manurial trials are conducted.

B. Normal rainfall in mm. and C. Irrigation and drainage facilities :

Information—N.A.

D. Soil type and soil analysis :

(i) Clay soil. (ii) Chemical analysis and (iii) Mechanical analysis—N.A.

E. No. of experiments :

Paddy—3, Maize—1. Total=4.

36. Sugarcane Research Sub-Station, Patna.

A. General information to D. Soil type and soil analysis :

Same as in Botanical sub station, Patna above.

E. No. of experiments :

Sugarcane—29. Total=29.

37. Government Agricultural Farm, Piprakothi.

A. General information :

(i) In Champaran district, 3 miles from Jindhara Railway Station. Slightly sloped with average drainage. (ii) Light sandy loam tract. (iii) Established in 1955. (iv) Paddy, sugacane, maize, jute, wheat, pea, barley and *moong* are the main crops which are grown in rotation. (v) Agronomical, varietal and cultural trials are carried out in the farm.

B. Normal rainfall in mm. :

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	Total
215.4	337.7	364.3	212.9	154.9	8.4	12.7	27.2	14.6	26.5	21.8	34.7	1431.1

(Av. rainfall is based on the period 1958—1963).

C. Irrigation and drainage facilities :

(i) (a) From 1955. (b) From mobile pumping set and Kirloskar pump. (ii) Proper drainage system exists.

D. Soil type and soil analysis :

(i) Sandy loam to a depth of 6″ to 1 ft. with ash colour. (ii) Chemical analysis and (iii) Mechanical analysis—N. A.

E. No. of experiments :

Paddy—3, Wheat—13, *Jowar*—1, Maize—8, Gram—1, *Jowar* fodder—1. Total=27.

38. Dictrict Agricultural Farm, Purnea. (Purnea).

A. General information to D. Soil type and soil anlysis :

Information—N.A.

E. No. of experiments :

Paddy—4, Wheat—5, Maize—2, Potato—3. Total=14.

39. Agricultural Research Institute (Sugarcane Research Station), Pusa.

A. General information :

(i) In Darbhanga district, Latitude 25.59° N, longitude 85.40° E. Flat and level land with slight slope. (ii) An alluvial calcareous tract. (iii) Established in 1936. (iv) G.M.—sugarcane—G.M.—wheat is the normal rotation of crop in the tract. (v) Varietal, manurial and cultural trials on sugarcane, maize, wheat, paddy etc.

B. Normal rainfall in mm.

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	Total
192.8	306.6	288.8	205.0	46.5	6.1	1.5	25.4	10.9	4.1	18.3	32.5	1138.5

(Av. rainfall is based on the period 1944—1958).

C. Irrigation and drainage facilities :

(i) (a) N.A. (b) From river pump. (iii) No drainage facilities exist.

D. Soil type and soil analysis :

(i) Calcareous sandy loam, silty clay loam, clay loam and loam to a depth of 10-12 ft. with white or greyish white colour.

(ii) Chemical analysis : (% of various constituents analysed for)

	Sandy loam	Silt loam	Silt clay loam	Clay loam	Loam
Inrol silica	45.58	41.16	40.83	41.16	40.62
Gol. silica	00.19	0.28	0.19	0.28	0.24
P_2O_5	0.05	0.06	0.92	0.07	0.11
K_2O	.092	0.88	0.93	1.16	0.75
CaO	22.40	17.39	15.43	11.15	15.50
MgO	0.21	0.28	0.31	0.33	0.29
Fe_2O_3	2.02	4.63	3.42	4.10	3.66
Al_2O_3	5.75	6.38	6.50	6.68	7.16
Org. C	297.40	334.60	468.00	444.00	362.00
Org. N	0.03	0.04	0.05	0.05	0.04
C/N	8.57	8.90	8.29	7.20	8.80

(iii) Mechanical analysis : (% of the various constituents analysed for)

	Sandy loam	Silt loam	Silt clay loam	Clay loam	Loam
pH	8.20	8.20	8.40	8.40	8.40
Sand	30.26	20.25	20.63	28.89	32.87
Silt	25.05	42.25	39.12	24.25	25.05
Clay	5.35	11.75	14.76	13.75	13.25
$CaCO_3$	39.14	25.75	26.50	33.11	28.83

E. No. of experiments :

Paddy—7, Wheat—14, Maize—10, Potato—2, Cabbage—4, Cauliflower—4, Tomato—3, Onion—4, Gram—1, Sugarcane—85, Groundnut—2, *Til*—1, Chillies—3, *Jowar*—1, Berseem—2, Mixed cropping—1. Total=144.

40. District Agricultural Farm, Putida.

A. General information :

(i) In Singhbhum district, 6 miles from Chaibasa Railway Station. Even topography. (ii) A hilly tract. (iii) Established in 1926. (i) (a) *Kharif* : Upland maize—*arhar*, *jowar—dhaincha*

Rabi :—Upland gram, pea, wheat, barley, vegetable and sugarcane. (b) Low land: *Kharif*—paddy, *rabi*—gram and fallow are the normal cropping pattern in the tract. (v) Various kinds of varietal, manurial and cultural trials are conducted at the farm.

B. Normal rainfall in mm. :

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	Total
161.5	279.5	252.2	228.9	82.3	14.2	—	9.1	9.7	28.5	17.0	31.8	1114.7

(The av. figure is based on a period of 20 years).

C. Irrigation and drainage facilities :

(i) (a) and (b) No irrigation facilities available. (b) No proper drainage exists.

D. Soil type and soil analysis :

(i) Rocky with black colour to a depth of 5′ (ii) Chemical analysis and (iii) Mechanical analysis—N.A

E. No. of experiments :

Paddy—18, Wheat—10, Maize—7, *Jowar* fodder—1, *Sanai*—1. Total=37.

41. Agricultural Research Institute, Sabour.

A. General information :

(i) Bhagalpur district, 7 miles from Pusa Road Railway Station. (ii) to (v) N.A.

B. Normal rainfall in mm. and C. Irrigation and drainage facilities :

Information—N.A.

D. Soil type and soil analysis :

(i) Loam soil. (ii) Chemical analysis and (iii) Mechanical analysis—N.A.

E. No. of experiments :

Paddy—45, Wheat—46, Maize—26, *Marva*—6, Cheena—2, Potato—2, Cabbag—3, Cauliflower—3, Tomato—3, Onion—3, Soyabean—3, Gram—20, *Khesri*—6, *kalai*—6, *Moong*—3, *Masoor*—2, Pea—4, Castor—6, Groundnut—5, *Til*—11, Chillies—2, *Jowar* fodder—4, *Sanai*—1, Berseem—2, Mixed cropping—2. Total=214.

42. District Agricultural Farm, Agwanpur (Saharsa).

A. General information :

(i) In Saharsa district, 7 miles from Saharsa Railway Station. A levelled low land. (ii) A sandy loam tract. (iii) Established in 1958. (iv) (a) Paddy—wheat, (b) Sugarcane—G.M.—wheat. (c) Jute—barley, pea and (d) Marua—wheat are the normal rotation of crop in the tract. (v) Varietal and manurial trials are conducted at the farm.

B. Normal rainfall in mm. :

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	Total
106.4	203.7	371.1	190.5	11.07	—	0.5	0.3	—	—	12.9	109.9	1106.0

(The av. figure is based on the period June 1962 to May 1963).

C. Irrigation and drainage facilities :

(i) (a) and (b) Irrigation facilities as two pumping set of 6.5 H.P. each are available. (ii) No proper drainage facilities exist.

D. Soil type and soil analysis :

(i) Sandy loam to a depth of 4′ with grey colour. (ii) Chemical analysis and (iii) Mechanical analysis—N.A.

E. No. of experiments :

Paddy—2, Wheat—4, Barley—1. Total=7.

43. Botanical Sub-Station, Government Agricultural Farm, Sugarcane Research Station, Sepaya.

A. General information :

(i) In Saran district, 6 miles from Sasamusa Railway Station. A plain topography. (ii) An alluvial tract. (iii) Established in 1913. (iv) Paddy—green manure—paddy is the normal cropping pattern in the tract. (v) Agronomical and manurial trials are conducted at the farm.

B. Normal rainfall in mm. :

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	Total
186.8	259.4	320.6	214.2	72.3	0.2	2.3	25.1	11.8	14.1	5.9	30.6	1143.3

(The Av. figure is based on 1952—63).

C. Irrigation and drainage facilities :

(i) (a) From 1955. (b) From tube well for the time being and formerly from canal. (ii) Drainage system partly exists.

D. Soil type and soil analysis :

(i) Alluvial soil to a depth of 1 ft. with light brown colour. (ii) Chemical analysis—pH 8 8. (iii) Mechanical analysis—N.A.

E. No. of experiments :

Paddy—13, Wheat—12, *Jow*—3, Maize—4, Gram—6, Sugarcane—12, *Kalai*—3, *Jowar* fodder—2, Mixed cropping—2. Total=57.

44. Government Agricultural Farm, Siris.

A. General information :

(i) In Gaya district, 13 miles from Anugrah Narayan Road Railway Station. (ii) N.A. (iii) Established in 1927. (iv) Paddy—wheat, G.M.—paddy—wheat, Fallow—wheat and Paddy—gram are the normal cropping pattern in the tracts. (v) N.A.

B. Normal rainfall in mm. :

June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	Total
108.2	205.7	311.4	154.4	10.2	—	—	—	—	—	—	—	789.9

(The period on which the figure is based—N.A.)

C. Irrigation and drainage facilities :

(i) (a) N.A. and (b) From Rahat pump. (ii) No drainage facilities exists.

D. Soil type and soil analysis :

Informations—N.A.

E. No. of experiments :

Paddy—2, Wheat—4. Total=6.

45. Government Agricultural Farm, Siwan. (Saran).

A. General information to D. Soil type and soil analysis :

Information—N.A.

E. No. of experiments :

Maize—1. Total=1.

46. Zonal Centre, Warsaliganj. (Gaya).

A. General information to D. Soil type and soil analysis :

Information—N.A.

E. No. of experiments :

Sugarcane—20. Total=20.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 57(128).**

Site :- Distt. Agri. Farm, Baliapur. **Type :- 'M'.**

Object :—To compare the effect of C/N with A/S on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Red laterite. (b) N.A. (iii) 16.6.1957/25 to 27.8.1957. (iv) (a) 5 ploughings. (b) Japanese method. (c) 7 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) Nil. (vi) BK—141. (vii) Irrigated. (viii) 3 weedings. (ix) N.A. (x) 24.11.1957.

2. TREATMENTS :

All combinations of (1) and (2)+one control (no manure)
(1) 2 sources of N : S_1=A/S and S_2=C/N.
(2) 4 manurial treat ments : M_1=25 lb./ac. of N, M_2=50 lb./ac. of N, M_3=50 lb./ac. of N+40 lb./ac. of P_2O_5 as Super and M_4=M_3+40 lb./ac. of K_2O as Mur. Pot.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 1/60 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Attack of *gundli* bug. BHC 5 % dusting. (iii) Tiller count and grain and straw yield. (iv) (a) 1957—1958. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 837 lb./ac. (ii) 201.7 lb./ac. (iii) 'Control *vs.* rest' is significant. Other effects are highly significant. (iv) Av. yield of grain in lb./ac.

Control = 597 lb./ac.

	M_1	M_2	M_3	M_4	Mean
S_1	535	849	1296	1646	1082
S_2	494	473	1070	576	653
Mean	515	661	1183	1111	868

S.E. of S marginal mean = 58.2 lb./ac.
S.E. of M marginal mean = 82.4 lb./ac
S.E. of body of table or control mean = 116.5 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 58(118).**

Site :- Distt. Agri. Farm, Baliapur. **Type :- 'M'.**

Object :—To compare the effect of C/N with A/S on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Red laterite. (b) N.A. (iii) 18.6.1958/6, 7.8.1958. (iv) (a) 5 ploughings. (b) Japanese method. (c) 7 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) Nil. (vi) BK—141. (vii) Irrigated. (viii) 3 weedings. (ix) 23.17″. (x) 26, 28.11.1958.

2. TREATMENTS and 3. DESIGN:

Same as in expt. no. 57(128) above.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Tiller count and grain and straw yield. (iv) (a) 1957—1958. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1511 lb./ac. (ii) 227.8 lb./ac. (iii) 'Control *vs.* rest' and main effect of S are highly significant. Main effect of M and interaction S×M are not significant. (iv) Av. yield of grain in lb./ac.

Control = 804 lb./ac.

	M_1	M_2	M_3	M_4	Mean
S_1	1746	1928	1818	1924	1854
S_2	1160	1485	1322	1414	1345
Mean	1453	1707	1570	1669	1600

S.E. of S marginal mean = 65.8 lb./ac.
S.E. of M marginal mean = 93.0 lb./ac.
S.E. of body of table or control mean = 131.5 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 58(117).**

Site :- Distt. Agri. Farm, Baliapur. **Type :- 'M'.**

Object :—To find out the influence of different trace elements as soil application with and without lime.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Red laterite. (b) N.A. (iii) 24.6.1958/26.8.1958. (iv) (a) 6 ploughings. (b) Japanese method. (c) 7 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) 40 lb./ac. each of N and P as A/S and Super at planting. (vi) BK—88. (vii) Unirrigated. (viii) 4 weedings and hoeings. (ix) 17.27″. (x) 10.12.1958.

2. TREATMENTS :

Main-plot treatments :

2 levels of lime : $L_0=0$ and $L_1=2400$ lb./ac.

Sub-plot treatments :

Soil application of 13 trace element treatments : T_0=Control, $T_1=5$ lb./ac. of B, $T_2=10$ lb./ac. of B, $T_3=20$ lb./ac. of Mn, $T_4=40$ lb./ac. of Mn, $T_5=5$ lb./ac. of Zn, $T_6=10$ lb./ac. of Zn, $T_7=5$ lb./ac. of Cu, $T_8=10$ lb./ac. of Cu, $T_9=1$ lb./ac. of Mo, $T_{10}=2$ lb./ac. of M_0, $T_{11}=20$ lb./ac. of Fe and $T_{12}=40$ lb./ac. of Fe.

B applied as Borax, Mn as $MnSo_4$, Zn as $ZnSo_4$, Cu as $CuSo_4$, Mo as Sod. Molybdate and Fe as $FeSo_4$.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block ; 13 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 15′×12′. (b) 12′×9′. (v) 1½′×1½′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Tiller count, grain and straw yield. (iv) 1958—1960. (b) No. (c) Nil. (v) (a) Kanke, Hazaribagh and Putida. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1963 lb./ac. (ii) (a) 486.0 lb./ac. (b) 361.3 lb./ac. (iii) No effect is significant. (iv) Av. yield of grain in lb./ac.

	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8	T_9	T_{10}	T_{11}	T_{12}	Mean
L_0	1623	1892	1804	1960	1892	1711	1919	1726	1919	1883	1779	1944	1908	1843
L_1	2245	2349	2074	2115	1919	1883	1674	2074	2064	2245	2453	1789	2178	2082
Mean	1934	2121	1939	2038	1906	1797	1797	1900	1992	2064	2116	1867	2043	1963

S.E. of difference of two
1. L marginal means = 95.3 lb./ac.
2. T marginal means = 180.7 lb./ac.
3. T means at the same level of L = 255.5 lb./ac.
4. L means at the same level of T = 263.3 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 59(57).**

Site :- Distt. Agri. Farm, Baliapur. **Type :- 'M'.**

Object :—To find out the influence of different trace elements as soil application with and without lime.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Red laterite. (b) N.A. (iii) 10.6.1959/5.8.1959. (iv) (a) 5 ploughings. (b) Japanese method. (c) 7 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) 40 lb./ac. each of N and P as A/S and Super at planting. (vi) BK—88. (vii) Unirrigated. (viii) 4 weedings. (ix) 33.83″. (x) 18.12.1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(117) on page 2.

5. RESULTS :

(i) 1841 lb./ac. (ii) (a) 176.1 lb./ac. (b) 331.6 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8	T_9	T_{10}	T_{11}	T_{12}	Mean
L_0	1802	1906	1906	1879	1854	1698	1802	1815	1841	1854	1789	2022	1944	1855
L_1	2036	1841	1983	1827	2009	1568	1996	1737	1595	1737	2074	1815	1516	1826
Mean	1919	1874	1945	1853	1932	1633	1899	1776	1718	1796	1932	1919	1730	1841

S.E. of difference of two
1. L marginal means = 34.5 lb./ac.
2. T marginal means = 165.8 lb./ac.
3. T means at the same level of L = 234.5 lb./ac.
4. L means at the same level of T = 227.9 lb./ac.

Crop :- Paddy. **Ref :- Bh. 59(58).**

Site :- Distt. Agri. Farm, Baliapur. **Type :- 'M'.**

Object :—To find out the effect of different green manure crops on the yield of Paddy.

1. BASAL CONDITIONS :

(i) G.M. crops—Paddy. (b) As per treatments. (c) Nil. (ii) (a) Red laterite. (b) N.A. (iii) 10.6.1959/12.8.1959. (iv) (a) 4 ploughings. (b) Japanese method. (c) 8 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) Nil. (vi) 498—2A. (vii) Unirrigated. (viii) 2 ploughings and hoeings. (ix) 29.52″. (x) 22.12.1959.

2. TREATMENTS :

5 G.M. crops preceding Paddy : G_0=Control (no G.M. crop), G_1=*Dhaincha*, G_2=*Kalai*, G_3=*Moong* and G_4=*Sanai*.

G.M. crops sown on 9.6.1959 and applied in *situ* on 27.7.1959.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) N.A. (b) 1/60 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Lodged. (ii) Nil. (iii) Tiller count, grain and straw yield. (iv) 1959—1960. (b) No. (c) Nil. (v) (a) Putida. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1974 lb./ac. (ii) 729.0 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	G_0	G_1	G_2	G_3	G_4
Av. yield	2007	2037	2041	1605	2181

S.E./mean = 326.0 lb./ac.

Crop :- Paddy. **Ref :- Bh. 54(7).**

Site :- Govt. Agri. Farm, Banka. **Type :- 'M'.**

Object :—To test the effect of potash on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Fallow—Paddy. (b) Paddy. (c) 40 lb./ac. of N as A/S and 40 lb./ac. of P_2O_5 as Super. (ii) (a) Heavy clayey. (b) N.A. (iii) N.A./29.8.1954. (iv) (a) Ploughing with *desi* plough. (b) Japanese method. (c) N.A. (d) 10″×10″. (e) 2 to 3. (v) Nil. (vi) BK.—115 (early). (vii) Irrigated. (viii) Weeding with rotary hoe twice. (ix) 31.01″. (x) 12.11.1954.

2. TREATMENTS :

5 manurial treatments : M_0=Control (no manure), M_1=40 lb./ac. of N as A/S, M_2=M_1+40 lb./ac. of P_2O_5 as super, M_3=M_1+40 lb./ac. of K_2O as Mur. Pot. and M_4=M_1+40 lb./ac. of K_2O as Mur. Pot.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) and (b) 101′×11′. (v) 2′ wide path alround each sub-plot. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Yield of grain and straw. (iv) (a) Yes. 1954—1958. (b) No. (c) Nil. (v) to (vii) Nil

5. RESULTS :

(i) 1795 lb./ac. (ii) 284.7 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	1432	1665	2173	1646	2058

S.E./mean = 142.3 lb./ac.

Crop :- Paddy. **Ref :- Bh. 55(89).**

Site :- Govt. Agri. Farm, Banka. **Type :- 'M'.**

Object :—To test the effect of potash on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Fallow—Paddy. (b) Fallow. (c) Nil. (ii) (a) Heavy clayey loam. (b) N.A. (iii) 27 to 29.7.1955. (iv) (a) Ploughing with *desi* plough. (b) Transplanting of paddy by Japanese method. (c) N.A. (d) 10″×10″. (e) 2 to 3. (v) Nil. (vi) BK—115 (early). (vii) Irrigated. (viii) Weeding by rotary hoe. (ix) 30.81″. (x) 6.12.1955.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 54(7) above.

5. RESULTS :

(i) 3333 lb./ac. (ii) 225.8 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	3075	3322	3473	3289	3506

S.E./mean = 112.9 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 56(118).**

Site :- Govt. Agri. Farm, Banka. **Type :- 'M'.**

Object :—To test the effect of potash on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (ii) (a) Clay. (b) N.A. (iii) N.A./28, 29.8.1956. (iv) (a) 3 ploughings by *desi* plough. (b) Japanese method. (c) 10 srs./ac. (d) 10"×10". (e) 2 to 3. (v) F.Y.M. at 10 C.L./ac. (vi) BK—115. (vii) Irrigated. (viii) 2 weedings. (ix) 24.60". (x) 1.12.1956.

2. TREATMENTS :

Same as in expt. no. 54(7) on page 4.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 100'×10'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1954—1958. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1228 lb./ac. (ii) 328 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	1361	1635	1197	857	1092

S.E./mean = 164 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 57(71).**

Site :- Govt. Agri. Farm, Banka. **Type :- 'M'.**

Object :—To test the effect of potash on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Vegetables. (c) F.Y.M. at 100 mds./ac. (ii) (a) Clay loam. (b) N.A. (iii) 4.7.1957/26.8.1958. (iv) (a) 4 ploughings followed by beaming. (b) Japanese method. (c) 7 srs./ac. (d) 10"×10". (e) N.A. (v) F.Y.M. at 5 C.L./ac. (vi) BK—115. (vii) Irrigated. (viii) 3 weedings by Japanese weeder. (ix) 27.33". (x) 17.12.1957.

2. TREATMENTS :

Same as in expt. no. 54(7) on page 4.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 1/30 ac. (b) 1/40 ac. (v) N.A. (vi) Yes.

4. GENERAL :

Same as in expt. no. 54(7) on page 4.

5. RESULTS :

(i) 2372 lb./ac. (ii) 505 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	2330	2612	2381	2144	2391

S.E./mean = 252.5 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 58(50).**

Site :- Govt. Agri. Farm, Banka. **Type :- 'M'.**

Object :—To test the effect of potash on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (ii) (a) Clay. (b) N.A. (iii) N.A./4.8.1958. (iv) (a) 3 ploughings by *desi* plough. (b) Japanese method. (c) 7 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) F.Y.M. at 10 C.L./ac. (vi) BK—115. (vii) Irrigated. (viii) 2 weedings by Japanese weeder. (ix) 21.20″. (x) 20, 21.11.1958.

2. TREATMENTS :

Same as in expt. no. 54(7) on page 4.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 99′×11′. (v) N.A. (vi) Yes.

4. GENERAL :

Same as in expt. no. 54(7) on page 4.

5. RESULTS :

(i) 3281 lb./ac. (ii) 455 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	2977	3373	2931	3286	3836

S.E./mean = 228 lb./ac.

Crop :- Paddy. **Ref :- Bh. 55(88).**

Site :- Govt. Agri. Farm, Banka. **Type :- 'M'.**

Object :—To study the effect of different G.M. crops on the yield of Paddy crop.

1. BASAL CONDITIONS :

(i) (a) G.M.—Paddy—Sugarcane. (b) Sugarcane. (c) N.A. (ii) (a) Heavy clay. (b) N.A. (iii) N.A./6, 7.8.1955. (iv) (a) 2 ploughings with *desi* plough and one beaming. (b) and (c) N.A. (d) 10″×10″. (e) N.A. (v) Nil. (vi) BK—36 (late). (vii) Unirrigated. (viii) Weeding. (ix) 30.81″. (x) 7.12.1955.

2. TREATMENTS :

6 manurial treatments : M_0=No manure, M_1=25 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super, $M_2=M_1$ +Sannhemp, $M_3=M_1$+*Dhaincha*, $M_4=M_1$+*Urid* and $M_5=M_1$+Jungle leaves.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) and (b) 33′×33′. (v) 2′×2′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of grain and straw. (iv) (a) No. (b) and (c) —. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3213 lb./ac. (ii) 287.1 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	2626	3099	3449	3473	3422	3212

S.E./mean = 143.5 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 56(253).**

Site :- Bot. Sub-Stn., Bikramganj. **Type :- 'M'.**

Object :—To study the effects of N, P and K on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Gram. (c) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy loam. (b) Refer soil analysis, Bikramganj. (iii) N.A./14, 15.8.1956. (iv) (a) 4 ploughings by country plough. (b) Japanese method. (c) 7 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) Nil. (vi) BK—36. (vii) Irrigated. (viii) 2 weedings and hoeings. (ix) 35.60″. (x) 18, 19.12.1956.

2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 3 levels of N as A/S : $N_0=0$, $N_1=40$ and $N_2=80$ lb./ac.
(2) 3 levels of P_2O_5 as Super : $P_0=0$, $P_1=40$ and $P_2=80$ lb./ac.
(3) 3 levels of K_2O as Mur. Pot. : $K_0=0$, $K_1=40$ and $K_2=80$ lb./ac.

3. DESIGN :

(i) 3^3 confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) N.A. (iii) 2. (iv) (a) N.A. (b) 33′×6′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2977 lb./ac. (ii) 134.3 lb./ac. (iii) Main effects of N and K, interactions N×K, P×K and W and Y components of NPK are all highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	Mean	K_0	K_1	K_2
N_0	2923	2857	2791	2857	2885	2828	2857
N_1	2942	2838	2923	2901	2894	2866	2942
N_2	3130	3130	3262	3174	3092	2998	3432
Mean	2998	2942	2992	2977	2957	2897	3077
K_0	2904	3026	2942				
K_1	3092	2800	2800				
K_2	2998	2998	3234				

S.E. of any marginal mean = 31.66 lb./ac.
S.E. of the body of any table = 54.85 lb./ac.

Crop :- Paddy (*Kharif*). **Ref :- Bh. 57(260).**

Site :- Bot. Sub-Stn., Bikramganj. **Type :- 'M'.**

Object :—To study the effect of N, P and K on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Wheat. (c) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy loam. (b) Refer soil analysis, Bikramganj. (iii) 30.6.1957/20, 21.8.1957. (iv) (a) 3 ploughings by country plough. (b) Japanese method. (c) 7 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) Nil. (vi) BK—36. (vii) Irrigated. (viii) Weeding after each irrigation. (ix) 11.00″. (x) 5, 6.12.1957.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 56 (253) on page 7.

5. RESULTS :

(i) 3387 lb./ac. (ii) 302.1 lb./ac. (iii) Y component of NPK interaction is highly significant. No other effect is significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	Mean	K_0	K_1	K_2
N_0	2989	3130	3243	3121	3130	2998	3234
N_1	3272	3526	3460	3419	3394	3507	3356
N_2	3488	3677	3700	3622	3719	3545	3601
Mean	3250	3444	3468	3387	3414	3350	3397
K_0	3319	3545	3380				
K_1	3215	3375	3460				
K_2	3215	3413	3564				

S.E. of any marginal mean = 71.2 lb./ac.
S.E. of body of any table = 123.3 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 58(316).**

Site :- Bot. Sub-Stn., Bikramganj. **Type :- 'M'.**

Object :—To study the effect of N, P and K on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Bikramganj. (iii) 3.7.1958/12 to 14.8.1958. (iv) (a) 3 ploughings by country plough. (b) Japanese method. (c) 7 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) Nil. (vi) BK—36. (vii) Irrigated. (viii) Weeding after each irrigation. (ix) 29.29″. (x) 29.11.1958 to 1.12.1958.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 56 (253) on page 7.

5. RESULTS :

(i) 2689 lb./ac. (ii) 137.1 lb./ac. (iii) Main effects of P and K and X component of NPK are significant. Interactions N×P, N×K and P×K are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	Mean	K_0	K_1	K_2
N_0	2607	2618	2827	2684	2600	2609	2842
N_1	2806	2813	2854	2824	2832	2931	2710
N_2	2410	2660	2604	2558	2391	2583	2700
Mean	2608	2697	2762	2689	2608	2708	2751
K_0	2527	2638	2659				
K_1	2636	2645	2842				
K_2	2660	2808	2784				

S.E. of any marginal mean = 32.3 lb./ac.
S.E. of body of any table = 56.0 lb./ac.

Crop :- Paddy. **Ref :- Bh. 54(38).**

Site :- Bot. Sub-Stn., Bikramganj. **Type :- 'M'.**

Object :—To test the efficiency of potash and other trace elements on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Wheat—Paddy. (b) Wheat. (c) 100 lb./ac. of A/S+100 lb./ac. of Super. (ii) (a) Sandy loam. (b) Refer soil analysis, Bikramganj. (iii) 30.6.1954/10, 11.8.1954. (iv) (a) 3 *desi* ploughings. (b) N.A. (c) 20 srs./ac. (d) 10″×10″. (e) 3 to 4. (v) Nil. (vi) BK—115 (early). (vii) Irrigated. (viii) Interculturing. (ix) 36.72″. (x) 25 to 27.11.1954.

2. TREATMENTS :

7 manurial treatments : M_0=No manure, M_1=40 lb./ac. of N as A/S, $M_2=M_1+40$ lb./ac. of P_2O_5 as Super, $M_3=M_2+40$ lb./ac. of K_2O as Mur. Pot., $M_4=M_3+MnSo_4$ at 30 lb./ac., $M_5=M_3$+Borax at 20 lb./ac. and $M_6=M_3+ZnSo_4$. at 20 lb./ac.

Broadcasting full dose of P and ½ dose of N at planting and the other ½ dose of N a month later.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) 33′×127′6″. (iii) 6. (iv) (a) and (b) 33′×16′6″. (v) 2′×2′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Height, no. of tillers and yield of grain. (iv) (a) 1953—1954. (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3301 lb./ac. (ii) 378.9 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6
Av. yield	2955	3324	3598	3316	3126	3466	3325

S.E./mean = 154.7 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 59(177).**

Site :- Bot. Sub-Stn., Bikramganj. **Type :- 'M'.**

Object :—To test the effect of gypsum on Paddy yield.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Bikramganj. (iii) N.A./7.8.1959. (iv) (a) 4 ploughings, puddling. (b) Japanese method. (c) 10 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) Nil. (vi) Local. (vii) Unirrigated. (viii) Hand hoeing once. (ix) 22.43″. (x) 15.12.1959.

2. TREATMENTS :

5 manurial treatments : M_0=Control, M_1=40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super, M_2=Gypsum at 2½ mds./ac., M_3=Gypsum at 5 mds./ac. and $M_4=M_1+M_2$.

Gypsum was applied 20 days before transplanting.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 68′×35′. (b) 66′×33′. (v) 1′ alround the plot. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1959—N.A. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2407 lb./ac. (ii) 200.8 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grainin lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	2010	2750	2140	2384	2750

S.E./mean = 100.4 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 54(37).**

Site :- Bot. Sub-Stn. Bikramganj. **Type :- 'M'.**

Object :—To test the effect of potash on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Wheat. (c) 100 lb./ac. of A/S+100 lb./ac. of Super. (ii) (a) Sandy loam. (b) Refer soil analysis, Bikramganj. (iii) 30.6.1954/8.8.1954. (iv) (a) 3 *desi* ploughings. (b) N.A. (c) 20 srs./ac. (d) 10″×10″. (e) 3 to 4. (v) Nil. (vi) BK—115 (early). (vii) Irrigated. (viii) Interculturing. (ix) 36.72″. (x) 28, 29.11.1954.

2. TREATMENTS :

5 manurial treatments : M_0=No manure, M_1=40 lb./ac. of N as A/S, $M_2=M_1+40$ lb./ac. of P_2O_5 as Super, $M_3=M_1+40$ lb./ac. of K_2O as Mur. Pot. and $M_4=M_3+40$ lb./ac. of P_2O_5 as Super.

Broadcasting full dose of P and ½ dose of N at planting and the other ½ dose of N a month later.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) 33′×118′. (iii) 4. (iv) (a) and (b) 33′×22′. (v) 2′×2′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Growth, date of flowering, no. of tillers, height and yield of grain. (iv) (a) Yes. (b) 1953—1956. (c) Nil. (v) and (vi) Nil. (vii) Expt. not. conducted in 1955.

5. RESULTS :

(i) 3018 lb./ac. (ii) 366 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	2623	3363	3001	3209	2893

S.E./mean = 183 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 56 (52).**

Site :- Bot. Sub-Stn., Bikramganj. **Type :- 'M'.**

Object :—To test the effect of potash on the yield of Paddy.

1. BASAL CONDITIONS:

(i) (a) Paddy—Wheat—Paddy. (b) Wheat. (c) 100 lb./ac. of A/S+100 lb./ac. of Super. (ii) (a) Sandy loam. (b) Refer soil analysis, Bikramganj. (iii) 15.6.1956/19.8.1956. (iv) (a) 3 ploughings with *desi* plough. (b) Sowing by local method ; transplanting in lines. (c) 20 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) Nil. (vi) 115—BK (early). (vii) Irrigated. (viii) Weeding, interculturing with rotary hoe. (ix) 46.49″. (x) 5, 6.12.1956.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 54 (37) above.

5. RESULTS :

(i) 2588 lb./ac. (ii) 183.8 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	2269	2577	2623	2670	2800

S.E./mean = 91.9 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 55(206).**
Site :- Citrus Res. Stn., Chianki. **Type :- 'M'.**

Object :—To find the suitable green manure for Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) As per treatments. (c) Nil. (ii) (a) Clayey loam. (b) N.A. (iii) N.A./20 to 23.8.1955. (iv) (a) 3 ploughings. (b) Sowing by broadcast and transplanting by Japanese method. (c) 10 srs./ac. (d) 10″×10″. (e) 3 to 4. (v) Nil. (vi) 498—2 A (late). (vii) Irrigated. (viii) Weeding. (ix) 25.17″. (x) 9.12.1955.

2. TREATMENTS :

4 G.M. crops preceding paddy : G_0=No G.M., G_1=*Dhaincha*, G_2=*Kalai* and G_3=*Moong*.
G.M. was applied on 11.8.1955. Amount N.A.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) 72′×15′. (b) 70.5′×13.5′. (v) 1½′×1½′ (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv (a) 1955—1958. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) The expt. was not conducted during 1956 and 1957.

5. RESULTS :

(i) 1510 lb./ac. (ii) 133.7 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of of grain in lb./ac.

Treatment	G_0	G_1	G_2	G_3
Av. yield	1451	1442	1620	1526

S.E./mean = 59.8 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 58(97).**
Site :- Citrus Res. Stn., Chianki. **Type :- 'M'.**

Object :—To find the suitable green manures for Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) As per treatments. (c) Nil. (ii) (a) Clayey loam. (b) N.A. (iii) 27.4.1958/28.8.1958. (iv) (a) 3 ploughings. (b) Sowing by broadcasting ; transplanting by Japanese method. (c) 10 srs./ac. (d) 10″×10″. (e) 3 to 4. (v) Nil. (vi) BK—36 (late) (vii) Nil. (viii) Weeding and hoeing. (ix) 17.63″. (x) 24.12.1958.

2. TREATMENTS :

Same as in expt. no. 55(206) above.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) 35′×25′. (b) 33′×22′. (v) 1′×1½′. (vi) Yes.

4. GENERAL :

(i) Not good ; no lodging. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1955—1956. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) Green manure crops water logged. (vii) The expt. was not conducted during 1956 and 1957.

5. RESULTS :

(i) 775 lb./ac. (ii) 534.1 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	G_0	G_1	G_2	G_3
Av. yield	628	1029	1019	425

S.E./mean = 238.9 lb./ac.

Crop :- Paddy ***(Kharif).*** **Ref :- Bh. 57(104).**

Site :- Citrus Res. Stn., Chianki. **Type :- 'M'.**

Object :—To compare the effect of C/N and A/S on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Wheat. (c) 40 lb./ac. of N as A/S+40 lb./ac. of P as Super. (ii) (a) Clayey loam. (b) N.A. (iii) 1.7.1957/27, 28.8.1957. (iv) (a) 3 ploughings. (b) Japanese method. (c) 10 srs./ac. (d) 10″×10″. (e) 3 to 4. (v) Nil. (vi) BK—36 (late). (vii) Nil. (viii) Nil. (ix) 6.91″. (x) 4.12.1957.

2. TREATMENTS :

All combinations of (1) and (2)+one control (no manure)

(1) 2 sources of N : S_1=C/N and S_2=A/S.

(2) 4 manurial treatments : M_1=25 lb./ac. of N, M_2=50 lb./ac. of N, $M_3=M_2+257$ lb./ac. of Super, $M_4=M_3+72$ lb./ac. of Pot. Sul.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 52′×16.5′. (b) 50′×14.5′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1957—N.A. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2795 lb /ac. (ii) 424.6 lb./ac. (iii) 'Control *vs.* others' is highly significant. Main effect of S is significant. Other effects are not significant. (iv) Av. yield of grain in lb./ac.

Control=2117 lb./ac.

	M_1	M_2	M_3	M_4	Mean
S_1	2488	2967	2457	2488	2600
S_2	3091	2967	3415	3168	3160
Mean	2789	2967	2936	2828	2880

S.E. of S marginal mean = 106.2 lb./ac.

S.E. of M marginal mean = 150.1 lb./ac.

S.E. of body of table or control mean = 212.3 lb./ac.

Crop :- Paddy ***(Kharif).*** **Ref :- Bh. 55(64).**

Site :- Bot. Sub-Stn., Dumka. **Type :- 'M'.**

Object :—To find out the effect of different levels of N, P and K on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) T.C. at 3 tons/ac. (ii) (a) Sandy loam. (b) N.A. (iii) 12.6.1955/10 to 12.8.1955. (iv) (a) Ploughing by *desi* plough 3 times. (b) Transplanting. (c) 10 srs./ac. (d) 9″×9″. (e) 2 to 3. (v) Nil. (vi) BK—36 (late). (vii) Unirrigated. (viii) 1 weeding. (ix) 12.3″. (x) 2.12.1955.

2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 3 levels of N as A/S : N_0=0, N_1=40 and N_2=80 lb./ac.
(2) 3 levels of P_2O_5 as Super : P_0=0, P_1=40 and P_2=80 lb./ac.
(3) 3 levels of K_2O as Mur. Pot. : K_0=0, K_1=40 and K_2=80 lb./ac.

Fertilizers were broadcast at transplanting.

3. DESIGN :

(i) 3^3 confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) Nil. (iii) 1. (iv) (a) 43′10″×6′. (b) 43′10″×4′. (v) 1′ on one side. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) No. (iii) Date of flowering, incidence of pest and yield of grain. (iv) (a) 1953—N.A. (b) No. (c) N.A. (v) (a) Purnea, Kanke, Bikramganj and Patna. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2207 lb./ac. (ii) 338.1 lb./ac. (iii) Main effects of N and P are highly significant. Interaction P×K is significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	Mean	K_0	K_1	K_2
N_0	2204	1544	2097	1948	1895	1810	2140
N_1	2364	1970	2278	2204	2374	2268	1970
N_2	2864	2034	2513	2470	2981	2183	2247
Mean	2477	1849	2296	2207	2417	2087	2119
K_0	3109	1885	2257				
K_1	2257	1586	2417				
K_2	2066	2076	2215				

S.E. of any marginal mean = 112.7 lb./ac.
S.E. of body of any table = 195.2 lb./ac.

* * *

Crop :- Paddy. **Ref :- Bh. 55(65).**
Site :- Bot. Sub-Stn., Dumka. **Type :- 'M'.**

Object :—To find out the effect of different levels of N, P and K on the yield on Paddy.

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 55(64) on page 12. Variety used is 498-2A (late).

5. RESULTS :

(i) 2355 lb./ac. (ii) 476.4 lb./ac. (iii) No effect is significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	Mean	K_0	K_1	K_2
N_0	1980	2215	2853	2349	2161	2545	2342
N_1	2438	2289	2374	2367	2204	2342	2555
N_2	2417	2183	2449	2350	2310	2257	2481
Mean	2278	2229	2559	2355	2225	2381	2459
K_0	2268	2076	2332				
K_1	2428	2257	2459				
K_2	2140	2353	2885				

S.E. of any marginal mean = 158.8 lb./ac.
S.E. of body of any table = 275.0 lb./ac.

Crop :- Paddy. **Ref :- Bh. 56(24).**

Site :- Bot-Sub. Stn., Dumka. **Type :- 'M'.**

Object :—To find out the effect of different levels of N, P and K on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 18.6.1956/14.7.1956. (iv) (a) One ploughing by tractor and 3 ploughings by *desi* plough. (b) Transplanting. (c) 7 to 10 srs/ac. (d) 10″×10″. (e) 2 to 3. (v) Nil. (vi) 498-2A (late). (vii) Unirrigated. (viii) 1 weeding. (ix) 53.10″. (x) 18.12.1956.

2. TREATMENTS :

Same as in expt. no. 55(64) on page 12.

3. DESIGN :

(i) 3^3 confd. (W component of the interaction NPK confd.). (ii) (a) 9 plots/block ; 3 blocks/replication. (b) N.A. (iii) 1. (iv) (a) 43′10″×6′. (b) 41′10″×4′. (v) 2′×2′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Date of flowering and yield of grain. (iv) (a) 1955—N.A. (b) No. (c) Nil. (v) Sabour, Patna and Purnea. (b) N.A. (vi)) and (vii) Nil.

5. RESULTS :

(i) 3270 lb./ac. (ii) 671 lb./ac. (lii) No effect is significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	Mean	K_0	K_1	K_2
N_0	2744	3336	3358	3146	2934	3313	3191
N_1	3057	3291	3782	3377	3927	3157	3046
N_2	3257	3458	3146	3287	3336	3213	3313
Mean	3019	3362	3429	3270	3399	3228	3183
K_0	3057	3403	3737				
K_1	3101	3235	3347				
K_2	2900	3447	3202				

S E. of marginal mean = 223.7 lb./ac.
S.E. of body of any table = 387.4 lb./ac.

Crop :- Paddy. **Ref :- Bh. 58(1).**

Site :- Bot. Sub-Stn., Dumka. **Type :- 'M'.**

Object :—To fix up optimum seed rate for *dhaincha* for green manuring Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Groundnut. (c) Night soil. (ii) (a) Sandy loam. (b) N.A. (iii) N.A./6.8.1958. (iv) (a) to (e) N.A. (x) Nil. (vi) 498—2A (late). (vii) Unirrigated. (viii) 1 weeding. (ix) 32.96″. (x) 23.12.1 58.

2. TREATMENTS :

4 seed rates of G.M. : G_0=no manure, G_1=4, G_2=6 and G_3=8 srs/ac.
Dhaincha was sown on 26.6.1958 in different plots and ploughed in on 2.8.1958.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 11′8″×21′8″. (b) 10′×20′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Yield of grain. (iv) (a) to (c) No. (v) (a) Sabour and Pusa. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1491 lb./ac. (ii) 305.1 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	G_0	G_1	G_2	G_3
Av. yield	1392	1373	1700	1499

S.E./mean = 124.6 lb./ac.

Crop :- Paddy. **Ref :- Bh. 55(48).**

Site :- Naya Dumka Farm, Dumka. **Type :- 'M'.**

Object :—To test the effect of potash on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) 30 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy loam. (b) N.A. (iii) N.A./26.7.1955. (iv) (a) 5 ploughings with *desi* plough. (b) Transplanting. (c) 8 srs/ac. (d) 1′×1′. (e) 3 to 4. (v) Nil. (vi) B.K.—115 (early). (vii) Unirrigated. (viii) Hoeing and weeding. (ix) 27.87″. (x) 15.11.1955.

2. TREATMENTS :

5 manurial treatments : M_0=Control, M_1=40 lb./ac. of N as A/S, $M_2=M_1+40$ lb./ac. of P_2O_5 as Super, $M_3=M_1+40$ lb./ac. of K_2O as Mur. Pot. and $M_4=M_2+40$ lb./ac. of P_2O_5 as Super.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) 92′×34′. (iii) 4. (iv) (a) and (b) 34′×16′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain and straw yield, height and tiller count. (iv) (a) 1955—1959. (b) No. (c) Nil. (v) (a) Pusa, Patna, Sabour, Bikramganj, Siris, Nawada, Kanke, Putida, Hathwara, Netarhat, Banka, Sepaya, Musheri, Darbhanga and Chianki. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1661 lb./ac. (ii) 309 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	1007	1332	2260	1757	1950

S.E./mean = 254.5 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 56(126).**

Site :- Naya Dumka Farm, Dumka. **Type :- 'M'.**

Object :—To test the effect of potash on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) (a) Sandy loam. (b) N.A. (iii) N.A./24.7.1956. (iv) (a) 4 ploughings by *desi* plough and puddling. (b) Japanese method. (c) 7 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) Nil. (vi) BK—115 (early). (vii) Unirrigated. (viii) 1 weeding. (ix) 42.38″. (x) 12.11.1956.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 55 (48) on page 15.

5. RESULTS :

(i) 1750 lb./ac. (ii) 295.0 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_2	M_4
Av. yield	1631	1430	1971	1981	1737

S.E./mean = 147.5 lb./ac.

Crop :- Paddy *(Kharif).* **Ref :- Bh. 57(105).**

Site :- Naya Dumka Farm, Dumka. **Type :- 'M'.**

Object :—To test the effect of potash on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) (a) Sandy loam. (b) N.A. (iii) N.A./25.8.1957. (iv) (a) 3 ploughings and puddling. (b) Japanese method. (c) 10 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) Nil. (vi) BK—115 (early). (vii) Unirrigated. (viii) Weeding once by Japanese weeder. (ix) 15.69″. (x) 2.12.1957.

2. TREATMETS to 4. GENERAL :

Same as in expt. no. 55 (48) on page 15.

5. RESULTS :

(i) 1448 lb./ac. (ii) 406.8 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	1171	1290	1662	1542	1577

S.E./mean = 203.4 lb./ac.

Crop :- Paddy *(Kharif).* **Ref :- Bh. 58(82).**

Site :- Naya Dumka Farm, Dumka. **Type :- 'M'.**

Object :—To test the effect of potash on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) (a) Sandy loam. (b) N.A. (iii) N.A./7.8.1958. (iv) (a) 4 ploughings. (b) Japanese method. (c) 10 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) Nil. (vi) BK—115 (early). (vii) Unirrigated. (viii) One weeding by Japanese weeder. (ix) 23.19″. (x) 20.11.1958.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 55(48) on page 15.

4. GENERAL :

(i) Satisfactory. (ii) Attack of *gundli* bug ; dusting of BHC 5%. (iii) Grain and straw yield. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) (a) and (b) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 2417 lb./ac. (ii) 222.7 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	2028	2471	2549	2430	2605

S.E./mean = 111.4 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 59(48).**

Site :- Naya Dumka Farm, Dumka. **Type :- 'M'.**

Object :—To test the effect of potash on the yield of Paddy.

BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) (a) Sandy loam. (b) N.A. (iii) N.A./22.7.1959. (iv) (a) 4 ploughings. (b) Japanese method. (c) 8 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) Nil. (vi) BK—115 (early). (vii) Unirrigated. (viii) Weeding twice by Japanese weeder. (ix) 53.25″. (x) 20.11.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 55(48) on page 15.

4. GENERAL :

(i) Good. (ii) Attack of *gundli* bug ; dusting of BHC 5%. (iii) Grain and straw yield, tiller count. (iv) (a) 1956—N.A. (b) Yes. (c) Nil. (v) (a) and (b) No. (vi) and (vii) Nil.

RESULTS :

(i) 1429 lb./ac. (ii) 248.8 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	1151	1457	1396	1611	1532

S.E./mean = 124.4 lb./ac.

Crop :- Paddy. **Ref :- Bh. 59(46).**

Site :- Naya Dumka Farm, Dumka. **Type :- 'M'.**

Object :—To test the effect of potash on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Wheat—Paddy. (b) Wheat. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) N.A./21.7.1959. (iv) (a) 4 ploughings. (b) Japanese method. (c) 8 srs./ac. (d) 10″×10″, (e) 2 to 3. (v) Nil. (vi) BK—115 (early). (vii) Unirrigated. (viii) 2 weedings by Japanese method. (ix) 53.25″. (x) 22.11.1959.

2. TREATMENTS :

5 manurial treatments : M_0=Control, M_1 =80 lb./ac. of N as A/S, M_2=M_1+ 80 lb./ac. of P_2O_5 as Super, M_3=M_1+40 lb./ac. of K_2O as Mur. Pot. and M_4=M_2+40 lb./ac. of K_2O as Mur. Pot.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) 178′×16′. (iii) 4. (v) (a) and (b) 34′×16′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Attack of *gundli* bug ; dusting of BHC 5 %. (iii) Yield of grain and straw. (iv) (a) 1959—N.A. (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1302 lb./ac. (ii) 297.7 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	1214	1481	1183	1373	1260

S.E./mean = 148.8 lb./ac.

Crop :- Paddy. **Ref :- Bh. 55(44).**

Site :- Naya Dumka Farm, Dumka. **Type :- 'M'.**

Object :—To study the effect of different G.M. crops on the yield of Paddy

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) 30 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super. (ii) (a) Clay loam. (b) N.A. (iii) 22.8.1955. (iv) (a) 6 ploughings with *desi* plough after burying G.M. (b) N.A. (c) 8 srs./ac. (d) 12″×12″. (e) 3 to 4. (v) Nil. (vi) BK—36 (late). (vii) Unirrigated. (viii) Weeding and hoeing. (ix) 12.44″. (x) 33.11.1955.

2. TREATMENTS :

6 manurial treatments : M_0=No manure, M_1=25 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super, M_2=M_1+Sannhemp, M_3=M_1+*Dhaincha*, M_4=M_1+*Urid* and M_5=M_1+Jungle leaves.

Amount of different G.M. are N.A.

3. DESIGN :

(i) L. Sq. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) and (b) 33′×16.5′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1955—N.A. (b) No. (c) Nil. (v) Banka, Jamui and Purnea. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1208 lb./ac. (ii) 239.0 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	777	1009	1338	1616	1041	1466

S.E./mean = 97.6 lb./ac.

Crop :- Paddy. **Ref :- Bh. 55(45).**

Site :- Naya Dumka Farm, Dumka. **Type :- ‘M’.**

Object :—To test the effect of lime on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) 30 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy. (b) N.A. (iii) N.A./13.8.1955. (iv) (a) 5 ploughings with *desi* plough. (b) N.A. (c) 8 srs./ac. (d) 12″×12″. (e) 3 to 4. (v) Nil. (vi) B.K.—36 (early). (vii) Unirrigated. (viii) 1 weeding and hoeing. (ix) 12.78″. (x) 27.11.1955.

2. TREATMENTS :

6 manurial treatments : M_0=Control, M_1=40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super+40 lb./ac. of K_2O as Mur. Pot., M_2=800 lb./ac. of lime, M_3=1600 lb./ac. of lime, M_4=2400 lb./ac. of lime and M_5=M_1+M_4.

Lime was applied as slaked lime.

5. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 5. (iv) (a) and (b) 33′×16.5′. (v) 2′ path alround the plot. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Grain and straw yield, height and tiller count. (iv) (a) 1955—1961. (b) No. (c) Nil. (v) (a) Kanke, Hathwara, Putida and Netarhat. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 705 lb./ac. (ii) 225.2 lb./ac. (iii) Treatment differences are not significant. (iii) Av. yield of grain in lb./ac

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	411	828	441	517	835	1197

S.E./mean = 100.9 lb./ac.

Crop :- Paddy (*Kharif*). **Ref :- Bh. 56(125).**

Site :- Naya Dumka Farm, Dumka. **Type :- 'M'.**

Object :—To test the effect of lime on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Fallow. (c) Nil. (ii) (a) Clay loam. (b) N.A. (iii) 10.8.1956. (iv) (a) 4 ploughings by *desi* plough and puddling. (b) Japanese method. (c) 7 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) Nil. (vi) BK—36 (late). (vii) Unirrigated. (viii) One weeding by Japanese weeder. (ix) 38.49″. (x) 17.12.1956.

2. TREATMENTS :

Same as in expt. no. 55 (45) on page 18.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) 100′×29′. (iii) 5. (iv) (a) and (b) 29′×15′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1955—1961. (b) Yes (during 1956—1958). (c) Nil (v) (a) Kanke, Hathwara, Putida and Netarhat. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 2187 lb./ac. (ii) 443 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	2196	2512	2152	1908	1987	2369

S.E./mean = 198.1 lb./ac.

Crop :- Paddy (*Kharif*). **Ref :- Bh. 57(106).**

Site :- Naya Dumka Farm, Dumka. **Type :- 'M'.**

Object :—To test the effect of lime on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) (a) Clay loam. (b) N.A. (iii) N.A./13.8.1957. (iv) (a) 4 ploughings and puddling. (b) Japanese method. (c) 10 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) Nil. (vi) BK—36 (late). (vii) Unirrigated. (viii) Weeding once by Japanese weeder. (ix) 17.13″. (x) 12.12.1957.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 55(45) on page 18.

5. RESULTS :

(i) 1177 lb./ac. (ii) 341.3 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	968	1161	1156	1212	1241	1324

S.E./mean = 152.6 lb./ac.

Crop :- Paddy (*Kharif*). **Ref :- Bh. 58(81).**

Site :- Naya Dumka Farm, Dumka. **Type :- 'M'.**

Object :—To test the effect of lime on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) (a) Clayey loam. (b) N.A. (iii) N.A./20.8.1958. (iv) (a) 3 ploughings and puddling. (b) Japanese method. (c) 10 srs./ac. (d) 10″×10″. (e) 2 or 3. (v) Nil. (vi) BK—36 (late). (vii) Unirrigated. (viii) One weeding by Japanese weeder. (ix) 14.31″. (x) 19.12.1958.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 56(125) on page 19.

5. RESULTS :

(i) 2574 lb./ac. (ii) 471 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	2623	2829	2603	2356	2274	2757

S.E./mean = 210.6 lb./ac.

Crop :- Paddy (*Kharif*). **Ref :- Bh. 59(47).**

Site :- Naya Dumka Farm, Dumka. **Type :- 'M'.**

Object :—To test the effect of lime on the yield of Paddy.

1. BASAL CONDITIONS

(i) (a) Nil. (b) Wheat. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) N.A./30.7.1959. (iv) (a) 5 ploughings. (b) Japanese method. (c) 8 srs./ac. (d) 10"×10". (e) 2 to 3. (v) Nil. (vi) CH. 10 (*Aus, Aman*). (vii) Unirrigated. (viii) Weeding twice. (ix) 41.90". (x) 4.10.1959.

2. TREATMENTS :

Same as in expt. no. 55 (45) on page 18.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) 214'×16'. (iii) 5. (iv) (a) and (b) 34'×16'. (v) Nil. (vi) Yes.

4. GENERAL :

Same as in expt. no. 56 (125) on page 19.

5. RESULTS :

(i) 550 lb./ac. (ii) 160.1 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	442	699	463	518	572	603

S.E./mean = 71.6 lb./ac.

Crop :- Paddy. **Ref :- Bh. 56(55).**

Site :- Govt. Agri. Farm, Gumla. **Type :- 'M'.**

Object :—To find out the effect of different sources of P_2O_5 on Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 4.6.1956/11.7.1956. (iv) (a) N.A. (b) Japanese method. (c) 10 srs./ac. (d) 10"×10". (e) N.A. (v) Nil. (vi) CH. 10. (vii) Irrigated. (viii) Weeding and hoeing. (ix) 33.07". (x) 8.10.1956.

2. TREATMENTS :

5 manurial treatments : M_0=No manure, M_1=40 lb./ac. of N as A/S, M_2=M_1+40 lb./ac. of P_2O_5 as Super, M_3=M_1+40 lb./ac. of P_2O_5 as B.M. and M_4=M_1+40 lb./ac. of P_2O_5 as Rock Phos.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) and (b) 26'×12'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Slight attack of helminthosporium and *gundli* bugs—controlled by dusting BHC 5%. (iii) Yield of grain and straw. (iv) (a) 1956—1958. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2052 lb./ac. (ii) 341.7 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	1598	2189	2269	2125	2077

S.E./mean = 152.8 lb./ac.

Crop :- Paddy. **Ref :- Bh. 57(120).**

Site :- Govt. Agri. Farm, Gumla. **Type :- 'M'.**

Object :—To find out the effect of different sources of P_2O_5 on Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Sandy loam. (b) N.A. (iii) N.A./12.8.1957. (iv) (a) 3 ploughings by *desi* plough. (b) Japanese method. (c) 10 srs/ac. (d) 10″×10″. (e) 3. (v) Nil. (vi) CH—10. (vii) Irrigated. (viii) 1 weeding and hoeing. (ix) 38.51″. (x) 30.10.1957 and 1.11.1957.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 56(55) on page 20.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Height of plants, tiller count, grain and straw yield. (iv) (a) 1956—1958. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1964 lb./ac. (ii) 485.3 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	1752	2039	1982	1974	2075

S.E./mean = 217.0 lb./ac.

Crop :- Paddy. **Ref :- Bh. 58(108).**

Site :- Govt. Agri. Farm, Gumla. **Type :- 'M'.**

Object :—To find out the effect of different sources of P_2O_5 on Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Sandy loam. (b) N.A. (iii) N.A./1.8.1958. (iv) (a) 3 ploughings by *desi* plough. (b) Japanese method. (c) 8 srs/ac. (d) 10″×10″. (e) 3. (v) Nil. (vi) CH—10. (vii) Unirrigated. (viii) 2 weedings and 1 hoeing. (ix) 23.63″. (x) 4.11.1958.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 56(55) on page 20.

4. GENERAL :

(i) Normal. (ii) Attack of *gundli* bug—BHC 5% sprayed. (iii) Straw and grain yield. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1144 lb./ac. (ii) 397.2 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	1081	1192	1102	1167	1177

S.E./mean = 177.6 lb./ac.

Crop :- Paddy. **Ref :- Bh. 59(52).**

Site :- Govt. Agri. Farm, Gumla. **Type :- 'M'.**

Object :—To test the effect of liming in acid soils on the yield of Paddy.

1. BASAL CONDITIONS:

(i) (a) Nil. (b) Paddy. (c) 2½ mds./ac. of A/S and Super. (ii) (a) Sandy loam. (b) N.A. (iii) N.A./4.8.1959. (iv) (a) 3 ploughings by *desi* plough followed by beaming. (b) Line sowing. (c) 8 srs./ac. (d) 10″×10″. (e) 4. (v)Nil. (vi) CH—10 (*Aus*). (vii) Unirrigated. (viii) 2 weedings. (ix) 32.46″. (x) 20.10.1959.

2. TREATMENTS :

6 manurial treatments : M_0=Control, M_1=40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super+40 lb./ac. of K_2O as Mur. Pot., M_2=800 lb./ac. of lime, M_3=1600 lb./ac. of lime, M_4=2400 lb./ac. of lime and $M_5=M_4+M_1$.

Lime applied as slaked lime.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 5. (iv) (a) N.A. (b) 1/40 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) No. of tillers, grain and straw yield. (iv) (a) 1959—1961. (b) No. (c) Nil. (v) (a) Netarhat. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 467 lb./ac. (ii) 96.7 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	362	510	368	360	459	745

S.E./mean = 43.2 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 59(105).**

Site :- Distt. Agri. Farm, Hazaribagh. **Type :- 'M'.**

Object :—To test the effect of liming the acidic soils on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Clayey loam. (b) N.A. (iii) N.A./24.7.1959. (iv) (a) 4 ploughings. (b) Japanese method. (c) 8 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) N.A. (vi) CH—10. (vii) Unirrigated. (viii) Weeding on 5.8.1959. (ix) Nil. (x) 17.10.1959.

2. TREATMENTS:

6 manurial treatments : M_0=No manure, M_1=40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super+40 lb./ac. of K_2O as Mur. Pot., M_2=800 lb./ac. of lime, M_3=1600 lb./ac. of lime, M_4=2400 lb./ac. of lime and $M_5=M_1+M_4$.

Lime applied one month before sowing on 26.6.1959.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 5. (iv) (a) N.A. (b) 43′×25½′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) *Gundli* bug attack—control measures N.A. (iii) Grain and straw yield. (iv) (a) N.A. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) Some damage by storm and heavy rain. (vii) Nil.

5. RESULTS :

(i) 1028 lb./ac. (ii) 295.4 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	810	1474	895	899	920	1168

S.E./mean =132.1 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 58(174).**

Site :- Distt. Agri. Farm, Hazaribagh. **Type :- 'M'.**

Object :—To study the effect of different green manures on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Clayey loam. (b) N.A. (iii) N.A./10.8.1958. (iv) (a) 2 ploughins by *desi* plough. (b) Japanese method. (c) 8 srs./ac. (d) 10″×10″. (e) 2. (v) Nil. (vi) BK—36. (vii) Unirrigated. (viii) One weeding and one hoeing. (ix) N.A. (x) 20.12.1958.

2. TREATMENTS :

5 G.M. crops preceding paddy : G_0=Control, G_1=*Moong*, G_2=*Kalai*, G_3=*Dhaincha* and G_4=*Sanai*.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) 37′×26′. (b) 33′×22′. (v) 2′×2′. (v) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Straw and grain yield. (iv) (a) No. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1931 lb./ac. (ii) 418.0 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	G_0	G_1	G_2	G_3	G_4
Av. yield	1421	1889	1930	2182	2233

S.E./mean = 186.9 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 58(178).**

Site :- Distt. Agri. Farm, Hazaribagh. **Type :- 'M'.**

Object :—To evaluate the influence of trace elements with and without lime on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Clayey loam. (b) Nil. (iii) N.A./15.8.1958. (iv) (a) 4 ploughings. (b) Japanese method. (c) 8 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) 5 mds/ac. of F.Y.M. and 10 lb./ac. of N as A/S+10 lb./ac. of P_2O_5 as Super. (vi) BK—88. (vii) Irrigated. (viii) 2 weedings and hoeings. (ix) N.A. (x) 20.11.1958.

2. TREATMENTS :

Main-plot treatments :

2 levels of lime : L_0=No lime, L_1=2400 lb./ac. of slaked lime.

Sub-plot treatments :

13 treatments of trace elements : T_0=Control, T_1=5 lb./ac. of B as Borax, T_2=10 lb./ac. of B as Borax, T_3=20 lb./ac. of Mn. as Mn SO_4, T_4=40 lb./ac. of Mn as Mn SO_4, T_5=5 lb./ac. of Zn as $ZnSO_4$, T_6=10 lb./ac. of Zn as $ZnSO_4$, T_7 =5 lb./ac. of Cu as C/S, T_8=10 lb./ac. of Cu as C/S, T_9=1 lb./ac. of Mo as Sod. Molybdate, T_{10}=2 lb./ac. of Mo as Sod. Molybdate, T_{11}=20 lb./ac. of Fe as $FeSO_4$ and T_{12}=40 lb./ac. of Fe as Fe SO_4.

3. DESIGN :

(i) Split-plot. (ii) 2 main-plots/block ; 13 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 14′×11′. (b) 12′×9′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1958—1960. (b) No. (c) Nil. (v) (a) Kanke, Baliapur and Putida. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 2003 lb./ac. (ii) (a) 439.1 lb./ac. (b) 331.6 lb./ac. (iii) Interaction L×T alone is significant. (iv) Av. yield of grain in lb./ac.

	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8	T_9	T_{10}	T_{11}	T_{12}	Mean
L_0	2090	1815	1944	2038	2271	1944	1581	1763	1944	1815	1493	2022	1581	1869
L_1	2252	2375	2566	1779	1919	2255	1867	2074	2385	1831	2401	1815	2245	2136
Mean	2171	2095	2255	1909	2095	2100	1724	1919	2165	1823	1947	1919	1913	2003

S.E. of difference of two

1. L marginal means = 86.1 lb./ac.
2. T marginal means = 165.8 lb./ac.
3. T means at the same level of L = 234.5 lb./ac.
4. L means at the same level of T = 241.2 lb./ac.

Crop :- Paddy. **Ref :- Bh. 59(174).**

Site :- Distt. Agri. Farm, Hazaribagh. **Type :- 'M'.**

Object :—To evaluate the influence of trace elements with and without lime on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super and trace elements as per treatments. (ii) (a) Heavy soils. (b) N.A. (iii) N.A /31.7.1959. (iv) (a) 2 ploughings by *desi* plough. (b) Japanese method. (c) 8 srs./ac. (d) 10"×10". (e) 3. (v) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (vi) BK—88. (vii) Unirrigated. (viii) One weeding. (ix) 22.19". (x) 2.11.1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58 (178) on page 23.

5. RESULTS :

(i) 2142 lb./ac. (ii) (a) 51.0. lb./ac. (b) 281.4 lb./ac. (iii) Main effect of T alone is highly significant. No effect is significant. (iv) Av. yield of grain in lb./ac.

	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8	T_9	T_{10}	T_{11}	T_{12}	Mean
L_0	2333	2282	2061	2178	2307	1919	2476	2389	1957	2243	1905	2073	2139	2174
L_1	2009	2255	2333	2476	2190	1892	1944	2347	1815	1854	2139	1983	2178	2109
Mean	2171	2269	2197	2327	2249	1906	2210	2368	1886	2049	2022	2028	2159	2142

S.E. of difference of two

1. L marginal means = 10.0 lb./ac.
2. T marginal means = 140.7 lb./ac.
3. T means at the same level of L = 199.0 lb./ac.
4. L means at the same level of T = 191.4 lb./ac.

Crop :- Paddy. **Ref :- Bh. 58(40).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'M'.**

Object :—To find out the influence of trace elements as soil application with and without lime on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Reddish sandy. (b) Refer soil analysis, Kanke. (iii) N.A./ 17, 18.8.1958. (iv) (a) 3 ploughings. (b) Japanese method. (c) N.A. (d) 1′×1′. (e) 3. (v) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. 3/4th at transplating and rest a month later. (vi) BK—115. (vii) Unirrigated. (viii) 3 weedings. (ix) 30". (x) 17.11.1958.

2. TREATMENTS:

Same as in expt. no. 58 (178) on page 23.

3. DESIGN:

(i) Split-plot. (ii) (a) 2 main-plots/block; 13 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) and (b) 12′×9′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield and individual plant characteristics. (iv) (a) 1958—contd. (b) No. (c) Nil. (v) (a) Putida, Baliapur and Hazaribagh. (b) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 2745 lb./ac. (ii) (a) 470.6 lb./ac. (b) 107.0 lb./ac. (iii) No effect is significant. (iv) Av. yield of grain in lb./ac.

	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8	T_9	T_{10}	T_{11}	T_{12}	Mean
L_0	2710	2621	2870	2977	2310	2692	2426	3421	2381	3332	2488	3225	2488	2765
L_1	2737	2648	2825	2559	2666	2755	2781	2355	2577	2781	3066	2914	2755	2725
Mean	2724	2635	2848	2768	2488	2724	2604	2888	2479	3057	2777	3069	2622	2745

S.E. of difference of two

1. L marginal means = 92.3 lb./ac.
2. T marginal means = 53.5 lb./ac.
3. T means at the same level of L = 75.6 lb./ac.
4. L means at the same level of T = 299.5 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 59(11).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'M'.**

Object :—To find out the influence of trace elements as soil application with and without lime on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Reddish sandy. (b) Refer soil analysis, Kanke. (iii) N.A./4.8.1959. (iv) (a) 3 ploughings. (b) Japanese method. (c) N.A. (d) 10"×10". (e) 3. (v) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super at planting. (vi) BK—88. (vii) Unirrigated. (viii) 3 weedings. (ix) 28.6". (x) 2.11.1959.

2. TREATMENTS :

Same as in expt. no. 58(178) on page 23.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block ; 13 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 14′×10′. (b) 11′×8′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield ; study of individual plant characteristics. (iv) (a) 1958—contd. (b) No. (c) Nil. (v) (a) Putida, Baliapur and Hazaribagh. (b) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 2020 lb./ac. (ii) (a) 1159.3 lb./ac. (b) 343.1 lb./ac. (iii) No effect is significant. (iv) Av. yield of grain in lb./ac.

	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8	T_9	T_{10}	T_{11}	T_{12}	Mean
L_0	1793	2156	1767	2170	1523	1896	1776	2361	1617	2168	2212	1920	1784	1934
L_1	1962	2029	2227	2137	1912	2099	1973	2078	2324	2306	2077	2128	2138	2107
Mean	1878	2093	1997	2154	1918	1998	1875	2220	1971	2237	2145	2024	1961	2020

S.E. of difference of two

1. L marginal means = 227.4 lb./ac.
2. T marginal means = 171.6 lb./ac.
3. T means at the same level of M = 242.6 lb./ac.
4. L means at the same level of T = 325.6 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 58(31).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'M'.**

Object :—To find out the influence of trace elements B, Zn and Mn as aerial spray on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Reddish sandy. (b) Refer soil analysis, Kanke. (iii) N.A./11.8.1958. (iv) (a) 3 ploughings. (b) Japanese method. (c) N.A. (d) 1′×1′. (e) 3. (v) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super ; 3/4th at transplanting and the rest a month later. (vi) BK—88. (vii) Unirrigated. (viii) 3 weedings. (ix) 15.74″. (x) 30.11.1958.

2. TREATMENTS :

13 aerial sprayings of trace elements : T_0=Control (water spray), $T_1=\frac{1}{2}$ lb./ac. of B as Borax, $T_2=1$ lb./ac. of B as Borax, $T_3=\frac{1}{2}$ lb./ac. of Zn as $ZnSO_4$, $T_4=1$ lb./ac. of Zn as $ZnSO_4$, $T_5=2$ lb./ac. of Mn as $MnSO_4$, $T_6=4$ lb./ac. of Mn as $MnSO_4$, $T_7=\frac{1}{2}$ lb./ac. of Cu as C/S, $T_8=1$ lb./ac. of Cu as C/S, $T_9=1/10$ lb./ac. of Mo as Sod. Molybdate, $T_{10}=1/5$ lb./ac. of Mo as Sod. Molybdate, $T_{11}=2$ lb./ac. of Fe as Ferrous Sulphate and $T_{12}=4$ lb./ac. of Fe as Ferrous Sulphate.

These treatments were given at 3 stages of growth of the crop, at tillering on 15.9.1958, during pre-flowering stage on 21.10.1958 and at flowering on 31.10.1958 each being an independent experiment with 3 replications.

3. DESIGN :

(i) R.B.D. (ii) (a) 13. (b) N.A. (iii) 3 for each stage of spraying. (iv) (a) 14′×11′. (b) 12′×9′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield ; study of individual plant characteristics. (iv) (a) 1958—N.A. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

1. Tillering stage.

(i) 2448 lb./ac. (ii) 416.2 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8	T_9	T_{10}	T_{11}	T_{12}
Av yield	2390	2568	2222	2586	2808	2514	2577	2381	2399	2301	3039	1911	2124

S.E./mean = 240.3 lb./ac.

2. Pre-flowering stage.

(i) 3089 lb./ac. (ii) 437.9 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8	T_9	T_{10}	T_{11}	T_{12}
Av. yield	3350	3706	3288	3466	2640	2932	3137	3262	2897	3323	2923	3128	2097

S.E./mean = 252.8 lb./ac.

3. Flowering stage.

(i) 3616 lb./ac. (ii) 737.2 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8	T_9	T_{10}	T_{11}	T_{12}
Av. yield	4106	3750	3003	3421	3457	3466	4523	3545	2737	3101	3617	3963	4319

S.E./mean = 425.6 lb./ac.

Crop :- Paddy (*Kharif*). **Ref :- Bh. 59(15).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'M'.**

Object :—To find out the effect of trace elements as sprays on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Reddish sandy. (b) Refer soil analysis, Kanke. (iii) N.A./ 6.8.1959. (iv) (a) 3 ploughings. (b) Japanese method. (c) N.A. (d) 10″×10″. (e) 3. (v) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super; 3/4th at transplanting and 1/4th a month later. (vi) BK—88. (vii) Nil. (viii) 3 weedings. (ix) 26.61″. (x) 30.11.1959.

2. TREATMENTS :

Main-plot treatments :

13 sprayings of trace elements : T_0=Water, T_1=Borax at 0.05%, T_2=Borax at 0.1%, T_3=$MnSO_4$ at 0.2%, T_4=$MnSO_4$ at 0.4%, T_5=$ZnSO_4$ at 0.5%, T_6=$ZnSO_4$ at 0.1%, T_7=C/S at 0.05%, T_8=C/S at 0.1%, T_1=$FeSO_4$ at 0.2%, T_{10}=$FeSO_4$ at 4%, T_{11}=Sod. Molybdate at 0.01%, and T_{12}=Sod. Molybdate at 0.02%.

Sub-plot treatments :

3 stages of spraying : S_1=At tillering on 26.9.1959, S_2=During pre-flowering on 21.10.1959 and S_3= At grain filling on 12.11.1959.

3. DESIGN:

(i) Split-plot. (ii) (a) 13 main-plots/block ; 3 sub-plots/main-plot. (b) N.A. (iii) 2. (iv) (a) 14′×11′. (b) 12′×9′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Individual plant characteristics and grain and straw yield. (iv) (a) 1958—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS:

(i) 2741 lb./ac. (ii) (a) 181.0 lb./ac (b) 74.0 lb./ac. (iii) No effect is significant. (iv) Av. yield of grain in lb./ac.

	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8	T_9	T_{10}	T_{11}	T_{12}	Mean
S_1	2329	2767	2635	3139	3000	2593	2365	2962	2411	3049	2259	2753	2598	2682
S_2	2881	2949	2932	3452	2983	1827	2881	3027	2531	2592	2414	2734	2932	2780
S_3	2636	2912	3118	2831	3174	1990	2875	3117	2784	3034	2763	2487	2198	2763
Mean	2615	2876	2895	3141	3052	2137	2707	3035	2575	2892	2479	2658	2576	2741

S.E. of difference of two

1. T marginal means = 104.5 lb./ac.
2. S marginal means = 20.5 lb./ac.
3. S means at the same level of T = 74.1 lb./ac.
4. T means at the same level of S = 120.7 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 59(18).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'M'.**

Object :—To assess the effectiveness of soaking seeds in nutrient solutions on growth, vigour and grain yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Reddish sandy. (b) Refer soil analysis, Kanke. (iii) 18.6.1959/31.7.1959. (iv) (a) 3 ploughings and levelling. (b) Japanese method. (c) N.A. (d) 10″×10″. (e) N.A. (v) Nil. (vi) BR—34. (vii) Nil. (viii) 3 weedings. (ix) 23.9″. (x) 22.11.1959.

2. TREATMENTS :

Main-plot treatments :

2 manurial treatments : M_0=No manure, M_1=40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super applied at planting.

Sub-plot treatments :

9 soaking treatments of seed : T_0=Control no soaking, T_1=A/S, T_2=Urea, T_3=KNO_3, T_4=KH_2PO_4, T_5=K_2HPO_4, T_6=K_3PO_4, T_7=K_2SO_4 and T_8=Hoaglands solution.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block ; 9 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 16′×9′. (b) 13′×6′. (v) $1\frac{1}{2}'\times1\frac{1}{2}'$. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) to (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 2630 lb./ac. (ii) (a) 791.5 lb./ac. (b) 631.1 lb./ac. (iii) Main effect of T alone is highly significant. (iv) Av. yield of grain in lb./ac.

	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8	Mean
M_0	1829	2496	2199	2612	2357	1976	2683	3350	2511	2447
M_1	1939	2773	2619	3172	2431	2642	3347	3158	3227	2812
Mean	1884	2635	2409	2892	2394	2309	3015	3259	2869	2630

S.E. of difference of two

1. M marginal means = 186.6 lb./ac.
2. T marginal means = 315.5 lb./ac.
3. T means at the same level of M = 446.2 lb./ac.
4. M means at the same level of T = 460.2 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 58(38).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'M'.**

Object :—To study the effect of spraying fertilizers at different stages of growth of Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow (c) Nil. (ii) (a) Reddish sandy. (b) Refer soil analysis, Kanke. (iii) N.A./ 6.8.1958. (iv) (a) 3 ploughings. (b) Japanese method. (c) N.A. (d) 1′×1′. (e) 3. (v) Nil. (vi) BK - 88. (vii) Unirrigated. (viii) 3 weedings. (ix) 16.06″. (x) 24.11.1958.

2. TREATMENTS :

5 manurial treatments : M_1=40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super applied to soil at planting, M_2=30 lb./ac. of N as A/S sprayed+40 lb./ac. of P_2O_5 as Super at planting, M_3= 40 lb./ac. of N as A/S applied to soil at planting+30 lb./ac. of P_2O_5 as Super sprayed, M_4=30 lb./ac. of N as Urea sprayed+40 lb./ac. of P_2O_5 as Super applied to soil at planting and M_5=40 lb./ac. of N as A/S applied to soil at planting+30 lb./ac. of P_2O_5 as Pot. di-hydrogen phosphate sprayed.

The sprayings were done at 3 stages of crop growth, at tillering stage, at pre-flowering stage and at flowering stage.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 5 for each stage of spraying. (iv) (a) 14′×11′. (b) 12′×9′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield, no. of earheads, plant height etc. (iv) (a) 1958—N.A. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

1. Tillering stage.

(i) 3515 lb./ac. (ii) 364.5 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac

Treatment	M_1	M_2	M_3	M_4	M_5
Av. yield	3519	3430	3545	3554	3528

S.E./mean = 163.0 lb./ac.

2. Pre-flowering stage.

(i) 3291 lb./ac. (ii) 337.4 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3	M_4	M_5
Av. yield	3003	3306	3297	3421	3430

S.E./mean = 150.9 lb./ac.

3. Flowering stage.

(i) 3119 lb./ac. (ii) 539.6 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3	M_4	M_5
Av. yield	3234	3075	3217	2817	3253

S.E./mean = 241.3 lb./ac.

Crop :- Paddy *(Kharif).* **Ref :- Bh. 59(13).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'M'.**

Object :—To study the effect of spraying fertilizers at different stages of growth of Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Reddish sandy. (b) Refer soil analysis, Kanke. (iii) N.A./ 16.8.1959. (iv) (a) 3 ploughings. (b) Japanese method. (c) N.A. (d) 10″×10″. (e) 3. (v) Nil. (vi) BK—88. (vii) Irrigated. (viii) 3 weedings. (ix) 26.77″. (x) 10.12.1959.

2. TREATMENTS :

Main-plot treatments :

5 manurial treatments : M_1=30 lb./ac. of N as A/ S+40 lb. ac. of P_2O_5 as Super to soil+Spraying of 4.75 % solution of A/S, M_2=30 lb./ac. of N as Urea+40 lb./ac. of P_2O_5 as

Super to soil+Spraying of 2.16 % solution of Urea, M_3=40 lb./ac. of N as A/S+30 lb./ac. of P_2O_5 as Super to soil+Spraying of 5.5 % solution of Super, M_4=40 lb./ac. of N as A/S+30 lb./ac. of P_2O_5 as Pot. di-hydrogen phosphate to soil+Spraying of 4.31 % solutiou of Pot. di-hydrogen phosphate and M_5= 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super to soil+water spray.

Sub-plot treatments :

Spraying at 3 stages of plant growth : S_1=At tillering on 23.9.1959, S_2=At pre-flowering on 23.10.1959, and S_3=At grain filling stage on 8.11.1959.

Sprayings were done at 100 gallons/ac.

3. DESIGN :

(i) Split-plot. (ii) (a) 5 main-plots/block ; 3 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) 14′×11′. (b) 12′×9′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Individual plant characteristics and grain and straw yield. (iv) (a) 1958—N.A. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 2134 lb./ac. (ii) (a) 242.7 lb./ac. (b) 315.1 lb./ac. (iii) No effect is significant. (iv) Av. yield of grain in lb./ac.

	M_1	M_2	M_3	M_4	M_5	Mean
S_1	2264	2101	2396	1925	2254	2188
S_2	1807	1939	2157	2221	2134	2052
S_3	2213	2247	2124	2085	2147	2163
Mean	2095	2096	2226	2077	2178	2134

S.E. of difference of two

1. M marginal means = 99.1 lb./ac.
2. S marginal means = 99.6 lb./ac.
3. S means at the same level of M = 222.7 lb./ac.
4. M means at the same level of S = 207.2 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 57(46).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'M'.**

Object :—To study the effect of N, P and K on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Maize. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Kanke. (iii) 8/9.7.1957. (iv) (a) 3 ploughings. (b) Behind the plough. (c) 30 srs./ac. (d) Between rows 10″. (e) —. (v) Nil. (vi) Black *gora*. (vii) Unirrigated. (viii) 3 hoeings and weedings. (ix) 28.58″. (x) 14.10.1957.

2. TREATMENTS :

All combination of (1), (2) and (3)

(1) 3 levels of N as A/S : N_0=0, N_1=20 and N_2=40 lb./ac.
(2) 3 levels of P_2O_5 as Super : P_0=0, P_1=20 and P_2=40 lb./ac.
(3) 3 levels of K_2O as Mur. Pot. : K_0=0, K_1=20 and K_2=40 lb./ac.

3. DESIGN :

(i) 3^3 partially confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) N.A. (iii) 2. (iv) (a) 24′×13′. (b) 22′×11′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Poor crop. (ii) Nil. (iii) Yield of grain. (iv) (a) 1957—1959. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 326 lb./ac. (ii) 261.9 lb./ac. (iii) No effect is significant. (iv) Av. yield of grain in lb./ac.

	N_0	N_1	N_2	Mean	K_0	K_1	K_2
P_0	228	220	464	304	228	359	325
P_1	135	293	352	260	185	278	317
P_2	478	382	383	414	617	301	324
Mean	280	298	400	326	343	313	322
K_0	528	224	277				
K_1	177	251	511				
K_2	135	419	412				

S.E. of any marginal mean = 61.7 lb./ac.
S.E. of body of any table = 106.9 lb./ac.

Crop :- Paddy ***(Kharif).*** **Ref :- Bh. 58(41).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'M'.**

Object :—To study the effect of N, P and K on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Reddish. (b) Refer soil analysis, Kanke. (iii) 24 to 29.6.1958. (iv) (a) 3 ploughings. (b) Line sowing. (c) 30 srs./ac. (d) Between rows 1′. (e) —. (v) Nil. (vi) 49—19 black *gora*. (vii) Unirrigated. (viii) 2 weedings. (ix) 37″. (x) 7, 8.10.1958.

2. TREATMENTS :

Same as in expt. no. 57(46) on page 30.

3. DESIGN :

(i) 3^3 partially confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) N.A. (iii) 2. (iv) (a) 36′×15′ (b) 35′×14′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) No. of tillers, grain and straw yield. (iv) (a) 1957—1959. (b) No. (c) Nil. (v) (a) Putida. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1604 lb./ac. (ii) 250.1 lb./ac. (iii) No effect is significant. (iv) Av. yield of grain in lb./ac.

	N_0	N_1	N_2	Mean	K_0	K_1	K_2
P_1	1505	1703	1523	1577	1358	1975	1398
P_1	1736	1358	1400	1498	1234	1679	1581
P_2	1769	1794	1646	1736	1769	1522	1917
Mean	1670	1618	1523	1604	1454	1725	1632
K_0	1539	1358	1465				
K_1	1917	1736	1522				
K_2	1554	1760	1582				

S.E. of any marginal mean = 59.0 lb./ac.
S.E. of body of any table = 102.1 lb./ac.

Crop :- Paddy (*Kharif*). **Ref :- Bh. 59(83).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'M'.**

Object :—To study the effect of N, P and K on the yield Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Barley. (c) 40 lb./ac. of N as A/S+30 lb./ac. of P as Super. (ii) (a) Red laterite. (b) Refer soil analysis, Kanke. (iii) 10 to 14.6.1959. (iv) (a) 4 ploughings. (b) Behind the plough. (c) 30 srs./ac. (d) 1′ between rows. (e) —. (v) Nil. (vi) 45—9 black *gora*. (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) 15 to 20.9.1959.

2. TREATMENTS :

Same as in expt. 57(46) on page 30.

3. DESIGN :

(i) 3^3 partially confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) N.A. (iii) 2. (iv) (a) N.A. (b) 1/80 th acre. (v) N.A. (vi) Yes.

4. GENERAL :

Same as in expt. no. 58(41) on page 31.

5. RESULTS :

(i) 1354 lb./ac. (ii) 393.4 lb./ac. (iii) No effect is significant. (iv) Av. yield of grain in lb./ac.

	N_0	N_1	N_2	Mean	K_0	K_1	K_2
P_0	1234	1371	1466	1357	1289	1392	1390
P_1	1172	1611	1249	1344	1632	1220	1180
P_2	1413	1398	1272	1361	1471	1474	1138
Mean	1273	1460	1329	1354	1464	1362	1236
K_0	1314	1529	1549				
K_1	1200	1508	1378				
K_2	1305	1343	1060				

S.E. of any marginal mean = 92.7 lb./ac.
S.E. of body of any table = 160.6 lb./ac.

Crop :- Paddy (*Kharif*). **Ref :- Bh. 58(79).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'M'.**

Object :—To find out the effects of different green manure crops on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy loam. (b) Refer soil analysis, Kanke. (iii) 21.6.1958/10.8.1958. (iv) (a) 2 ploughings. (b) Japanese method. (c) 7 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) Nil. (vi) BK—36. (vii) Unirrigated. (viii) Hoeing and weeding. (ix) 32.42″. (x) 13.12.1958.

2. TREATMENTS :

6 G.M. crops preceding Paddy : G_0=Fallow (control), G_1=*G. Margulata*, G_2=*B. Frondosa*, G_3=*Dhaincha* G_4=*Ipomea cornea*, and G_5=*Pongamia glabra*.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) 213′4″×16′8″. (iii) 4. (iv) (a) 34′2″×14′2″. (b) 32′6″×12′6″. (v) One row alround the net plot. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Tiller count, grain and straw yield. (iv) (a) to (c) No. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2176 lb./ac. (ii) 1137.4 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	G_0	G_1	G_2	G_3	G_4	G_5
Av. yield	1654	2443	1985	2078	1764	3143

S.E./mean = 568.7 lb./ac.

Crop :- Paddy. **Ref :- Bh. 54(20).**

Site :- Bot. Sub-Stn., Kanke. **Type :- 'M'.**

Object :—To find out the effect of growing different green manure crops and applying them to the succeeding paddy crop.

1. BASAL CONDITIONS :

(i) (a) Paddy—G.M.—Paddy. (b) As per treatments. (c) 10 C.L./ac. of F.Y.M. (ii) (a) Lateritie. (b) N.A. (iii) 19.6.1954/26.8.1954. (iv) (a) 3 ploughings and puddling before transplanting. (b) Transplanted. (c) 10 srs./ac. (d) 9″×9″. (e) 2 to 3. (v) Nil. (vi) 498—2 A—(late) (vii) Unirrigated. (viii) 4 weedings. (ix) 38.54″. (x) 4.1.1955.

2. TREATMENTS :

4 G.M. crops preceding paddy : G_0=Fallow (control), G_1=*Chokoar*, G_2=Sannhemp and G_3=*Dhaincha*.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 15′×60′. (b) 13′6″×58′6″. (v) One row alround. (vi) Yes.

4. GENERAL :

(i) Poor tillering. (ii) Nil. (iii) Yield of grain and date of flowering. (iv) (a) to (c) No. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 224 lb./ac. (ii) 69.0 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	G_0	G_1	G_2	G_3
Av. yield	210	229	229	228

S.E./mean = 28.2 lb./ac.

Grop :- Paddy. **Ref :- Bh. 55(47).**

Site :- Bot. Sub-Stn., Kanke. **Type :- 'M'.**

Object :—To find out the effect of growing different G.M. crops and applying them as manure to the succeeding Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Paira*. (c) 1 md./ac. of A/S+1½ mds./ac. of Super. (ii) (a) Clayey loam. (b) N.A. (iii) 24.6.1955/19.8.1955. (iv) (a) Ploughing by *desi* plough. (b) Japanese method. (c) 10 srs./ac. (d) and (e) N.A. (v) Nil. (vi) 498—2A—(late). (vii) Irrigated. (viii) Nil. (ix) 31.10″. (x) 10.11.1955.

2. TREATMENTS :

4 G.M. crops preceding paddy : G_0=Fallow (control), G_1=*Dhaincha*, G_2=*Kalai* and G_3=*Moong*.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) and (b) 68′×16′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Not good. (ii) Nil. (iii) Yield of grain. (iv) (a) No. (b) 1954—1958. (c) No. (v) (a) Sabour, Pusa, Patna, Sepaya, Musheri, Purnea, Dumka, Monghyr and Jamui. (b) N.A. (vi) The poor yield was due to drought conditions. (vii) Nil.

5. RESULTS :

(i) 140 lb./ac. (ii) 55.96 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	G_0	G_1	G_2	G_3
Av. yield	161	137	96	167

S.E./mean = 25.02 lb./ac.

Crop :- Paddy. **Ref :- Bh. 54(5).**

Site :- Bot. Sub-Stn., Kanke. **Type :- 'M'.**

Object :—To study the effect of Potash on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Fallow—Paddy. (b) Paddy. (c) Nil. (ii) (a) Clayey. (b) N.A. (iii) N.A./15.8.1954. (iv) (a) Ploughing by *desi* plough. (b) Transplanted. (c) 10 srs./ac. (d) 12″×12″. (e) 3 to 4. (v) Nil. (vi) BK—141 (medium). (vii) Unirrigated. (viii) Weeding. (ix) 36.34″. (x) 10.11.1954.

2. TREATMENTS :

5 manurial treatments : M_0=Control, M_1=40 lb./ac. of N as A/S, M_2=M_1+40 lb./ac. of P_2O_5 as Super, M_3=M_1+40 lb./ac. of K_2O as Mur. Pot. and M_4=M_3+40 lb./ac. of P_2O_5 as Super.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 36′×30′. (b) 33′×30′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Not good. (ii) Nil. (iii) Yield of grain and straw. (iv) (a) 1954—1955. (b) No. (c) Nil. (v) (a) Banka, Dharbanga, Monghyr, Sirish, Putida, Hathwara, Dumka, Sepaya and Sabour. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 647 lb./ac. (ii) 128.8 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	453	668	702	724	690

S.E./mean = 64.4 lb./ac.

Crop :- Paddy. **Ref :- Bh. 55(3).**

Site :- Bot. Sub-Stn., Kanke. **Type :- 'M'.**

Object :—To study the effect of Potash on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Fallow—Paddy. (b) Paddy. (c) Sanai. (ii) (a) Clayey. (b) Refer soil analysis, Kanke. (iii) N.A./20.8.1955. (iv) (a) Ploughing by *desi* plough. (b) N.A. (c) 10 srs./ac. (d) 12″×12″. (e) 3 to 4. (v) Nil. (vi) BK—141 (early). (vii) Irrigated. (viii) 1 weeding. (ix) 17.73″. (x) 23.11.1955.

2. TREATMENTS :

Same as in expt. no. 54(5) above.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 92′×14′. (b) 90′×12′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

Same as in expt. no. 54(5) on page 34.

5. RESULTS :

(i) 97 lb./ac. (ii) 35.8 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	44	86	101	106	148

S.E./mean = 17.9 lb./ac.

Crop :- Paddy. **Ref :- Bh. 55(4).**

Site :- Bot. Sub-Stn., Kanke. **Type :- 'M'.**

Object :—To test the effect of liming the acid soil on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Fallow—Paddy. (b) Paddy. (c) Sanai. (ii) (a) Clayey. (b) N.A. (iii) N.A./14.8.1955. (iv) (a) Ploughing by *desi* plough. (b) N.A. (c) 10 srs./ac. (d) 12″×12″. (e) 3 to 4. (v) Nil. (vi) BK—141 (early). (vii) Irrigated. (viii) 1 weeding. (ix) 17.73″. (x) 20.11.1955.

2. TREATMENTS :

6 manurial treatments : M_0=Control, M_1=40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super+40 lb./ac. of K_2O as Mur. Pot., M_2=800 lb./ac. of lime, M_3=1600 lb./ac. of lime, M_4=2400 lb./ac. of lime and $M_5=M_1+M_4$.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 5. (iv) (a) 49′×22′. (b) 48′×21′. (v) 6″×6″. (vi) Yes.

4. GENERAL :

(i) Very bad due to drought. (ii) Nil. (iii) Yield of grain. (iv) (a) to (c) No. (v) (a) Putida, Dumka and Hathwara. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 76 lb./ac. (ii) 16.95 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	55	107	69	56	83	85

S.E./mean = 7.58 lb./ac.

Crop :- Paddy. **Ref :- Bh. 54(19).**

Site :- Bot. Sub-Stn., Kanke. **Type :- 'M'.**

Object :—To study the effect of N, P and K and their combinations on the yield of Paddy.

1. BASAL CONDITIONS

(i) (a) Nil. (b) Paddy. (c) 10 C.L./ac. of F.Y.M.+40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (ii) (a) Laterite soil. (b) N.A. (iii) 17.6.1954/22.7.1954. (iv) (a) 3 ploughings by *desi* plough. (b) N.A. (c) 10 srs./ac. (d) 12″×12″. (e) 2 to 3. (v) *Dhaincha* G.M. (vi) 498—2A (late). (vii) Unirrigated. (viii) 2 weedings. (ix) 35.92″. (x) 28.12.1954.

2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 3 levels of N as A/S : N_0=0, N_1=40 and N_2=80 lb./ac.

(2) 3 levels of P_2O_5 as Super : $P_0=0$, $P_1=40$ and $P_2=80$ lb./ac.

(3) 3 levels of K_2O as Mur. Pot. : $K_0=0$, $K_1=40$ and $K_2=80$ lb./ac.

P_2O_5 and K_2O were applied at the time of planting half N at planting and the other half 3 weeks later.

3. DESIGN :

(i) 3^3 partially confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) N.A. (iii) 3. (iv) (a) 10′×10′. (b) 8′×8′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of grain and straw. (iv) (a) 1954—1957. (b) No. (c) Nil. (v) (a) Sabour, Dumka, Purnea, Patna and Bikramgunj. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1247 lb./ac. (ii) 520.3 lb./ac. (iii) Main effect of P and interaction N×P×K are highly significant. Other effects are not significant. (iv) Av. yield of grain in lb./ac.

	N_0	N_1	N_2	Mean	K_0	K_1	K_2
P_0	1416	1205	1409	1343	1332	1398	1299
P_1	1843	1446	1187	1492	1404	1470	1602
P_2	1096	799	821	905	666	888	1162
Mean	1452	1150	1139	1247	1134	1252	1354
K_0	1450	1036	917				
K_1	1474	888	1394				
K_2	1432	1526	1106				

S.E. of any marginal mean = 100.1 lb./ac.
S.E. of body of any table = 173.4 lb./ac.

Crop :- Paddy. **Ref :- Bh. 55(17).**
Site :- Bot. Sub-Stn., Kanke. **Type :- 'M'.**

Object :—To study the effect of N, P and K and their combinations on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 100 mds/ac. of F.Y.M.+40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (ii) (a) Laterite soil. (b) N.A. (iii) 19.6.1955/1.9.1955. (iv) (a) 3 ploughings by *desi* plough. (b) and (c) N.A. (d) 9″×9″. (e) 2 to 3. (v) G.M. by *dhaincha*. (vi) 498—2A (late). (vii) Unirrigated. (viii) Weeding twice. (ix) 31.10″. (x) 16.12.1955.

2. TREATMENTS :

Same as in expt. no. 54(19) on page 35.

3. DESIGN:

(i) 3^3 partially confd. (ii) (a) 5 plots/block ; 3 blocks/replication. (iii) 3. (iv) (a) 7′6″×13′6″. (b) 6′×12′. (v) 9″×9″. (vi) Yes.

4. GENERAL :

Same as in expt. no. 54(19) on page 35.

5. RESULTS :

(i) 1783 lb./ac. (ii) 354 lb./ac. (iii) Main effect of P is highly significant. Interaction N×P×K is significant. No other effect is significant. (iv) Av. yield of grain in lb./ac.

	N_0	N_1	N_2	Mean	K_0	K_1	K_2
P_0	1529	1664	1549	1581	1612	1554	1576
P_1	1764	1710	1798	1757	1617	1685	1970
P_2	1743	2115	2172	2010	2032	1978	2020
Mean	1679	1830	1840	1783	1754	1739	1855
K_0	1679	1852	1730				
K_1	1642	1772	1802				
K_2	1714	1865	1987				

S.E. of any marginal mean = 68 lb./ac.
S.E. of body of any table = 118 lb./ac.

Crop :- Paddy. **Ref :- Bh. 56(17).**

Site :- Bot. Sub-Stn., Kanke. **Type :- 'M'.**

Object :—To study the effect of N, P and K and their combinations on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 15.6.1956/19.8.1956. (iv) (a) 3 ploughings. (b) Japanese method ; transplanting in lines. (c) 7 srs./ac. (d) 9″×9″. (e) N.A. (v) 10 C.L./ac. of F.Y.M. (vi) 498—2A (late). (vii) Unirrigated. (viii) Weeding by rotary hoe. (ix) 31.61″. (x) 18.12.1956.

2. TREATMENTS :

Same as in expt. no. 54 (19) on page 35.

3. DESIGN :

Same as in expt. no. 55 (17) on page 36.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Measurement of height of plant, tiller count, grain and straw yield. (iv) (a) 1954—1957. (b) No. (c) Nil. (v) (a) Patna and Sabour. (b) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 2572 lb./ac. (ii) 334.4 lb./ac. (iii) No effect is significant. (iv) Av. yield of grain in lb./ac.

	N_0	N_1	N_2	Mean	K_0	K_1	K_2
P_0	2256	2788	2546	2530	2329	2679	2582
P_1	2433	2710	2598	2580	2424	2757	2559
P_2	2498	2721	2602	2607	2468	2760	2593
Mean	2396	2739	2582	2572	2407	2732	2578
K_0	2122	2390	2710				
K_1	2502	2939	2755				
K_2	2563	2891	2280				

S.E. of any marginal mean = 64.4 lb./ac.
S.E. of body of any table = 111.5 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 57(99).**

Site :- Bot. Sub-Stn., Kanke. **Type :- 'M'.**

Object :—To study the effect of N, P and K and their combinations on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 22.6.1957/27.7.1957. (iv) (a) 4 ploughings. (b) Japanese method. (c) 7 srs./ac. (d) 10″×10″. (e) N.A. (v) 10 C.L./ac. of F.Y.M. (vi) 498 –2A. (vii) Unirrigated. (viii) Weeding by rotary hoe. (ix) 40.84″. (x) 4 to 6.12.1957.

2. TREATMENTS :

Same as in expt. no. 54(19) on page 35.

3. DESIGN :

(i) 3^3 partially confd. (ii) (a) 3 blocks/replication ; 9 plots/block. (b) 80′×25′. (iii) 3. (iv) (a) 7′6″×25′. (b) 5′10″×23′4″. (v) One row alround. (vi) Yes.

4. GENERAL :

(i) Fairly good. (ii) Mild attack of helminthesporium—spraying of copper fungicide. (iii) Tiller count, grain and straw yields. (iv) (a) 1954—1957. (b) No. (c) Nil. (v) (a) Patna, Sabour, Pusa and Bikramganj. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 897 lb./ac. (ii) 450.9 lb./ac. (iii) Main effect of N alone is highly significant. (iv) Av. yield of grain in lb./ac.

	N_0	N_1	N_2	Mean	K_0	K_1	K_2
P_0	750	860	962	857	827	804	940
P_1	767	907	994	889	830	957	880
P_2	892	955	990	946	995	921	922
Mean	803	907	982	897	884	894	914
K_0	731	932	988				
K_1	842	897	944				
K_2	835	891	1015				

S.E. of any marginal mean = 86.8 lb./ac.
S.E. of body of any table = 150.3 lb./ac.

Crop :- Paddy. **Ref :- Bh. 54(18).**

Site :- Bot. Sub-Stn., Kanke. **Type :- 'M'.**

Object :—To study the effect of N, P and K and their combinations on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 10 C.L./ac. of F.Y.M.+40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (ii) (a) Laterite soil. (b) N.A. (iii) 19.6.1954/22.7.1954. (iv) (a) 3 ploughings by *desi* plough. (b) Transplanting. (c) 10 srs/ac. (d) 12″×12″. (e) 2 to 3. (v) G.M. by *dhaincha*. (vi) BK—36(late). (vii) Unirrigated. (viii) Weeding twice. (ix) 35.92″. (x) 17, 18.11.1954.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(19) on page 35.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of grain and straw. (iv) (a) 1954—1958. (b) No. (c) Nil. (v) (a) Sabour, Dumka, Purnea, Patna and Bikramgunj. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1846 lb./ac. (ii) 585.6 lb./ac. (iii) Main effect of P alone is significant. (iv) Av. yield of grain in lb./ac.

	N_0	N_1	N_2	Mean	K_0	K_1	K_2
P_0	2273	2065	1914	2084	1975	2301	1976
P_1	2192	1706	1966	1955	1823	2023	2019
P_2	1621	1417	1459	1499	1560	1607	1330
Mean	2029	1729	1780	1846	1786	1977	1775
K_0	2050	1540	1768				
K_1	2217	1881	1833				
K_2	1819	1766	1739				

S.E. of any marginal mean = 112.7 lb./ac.
S.E. of body of any table = 195.2 lb./ac.

Crop :- Paddy. **Ref :- Bh. 55(18).**

Site :- Bot. Sub-Stn., Kanke. **Type :- 'M'.**

Object :—To study the effect of N, P and K and their combinations on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 100 md./ac. of F.Y.M.+40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (ii) (a) Laterite soil. (b) N.A. (iii) 19.6.1955/1.9.1955. (iv) (a) 3 ploughings by *desi* plough. (b) N.A. (c) 10 srs./ac. (d) 9″×9″. (e) 2 to 3. (v) G.M. by *dhaincha.* (vi) BK—36 (late). (vii) Unirrigated. (viii) Weeding twice. (ix) 31.10″. (x) 17.12.1955.

2. TREATMENTS :

Same as in expt. no. 54 (19) on page 35.

3. DESIGN :

Same as in expt. no. 55 (17) on page 36.

4. GENERAL :

Same as in expt. no. 54 (18) on page 38.

5. RESULTS :

(i) 1115 lb./ac. (ii) 289.5 lb./ac. (iii) Interaction P×K alone is highly significant. (iv) Av. yield of grain in lb./ac.

	N_0	N_1	N_2	Mean	K_0	K_1	K_2
P_0	1023	1119	1186	1109	1065	1313	949
P_1	1283	1113	1186	1194	1131	1119	1332
P_2	1137	1137	853	1042	1289	871	966
Mean	1148	1123	1075	1115	1162	1101	1082
K_0	1143	1101	1243				
K_1	1213	1125	966				
K_2	1088	1143	1016				

S.E. of any marginal mean = 55.7 lb./ac.
S.E. of body of any table = 96.5 lb./ac.

Crop :- Paddy. **Ref :- Bh. 56(16).**

Site :- Bot. Sub-Stn., Kanke. **Type :- 'M'.**

Object :—To study the effect of N, P and K and their combinations on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 15.6.1956/19.8.1956. (iv) (a) N.A. (b) Seedlings raised by Japanese method ; transplanting in lines. (c) 7 srs./ac. (d) 9"×9". (e) N.A. (v) 10 C.L./ac. of F.Y.M. (vi) BK—36 (late). (vii) Unirrigated. (viii) Weeding by rotary hoe. (ix) 31.61". (x) 18.12.1956.

2. TREATMENTS :

Same as in expt. no. 54 (19) on page 35.

3. DESIGN :

Same as in expt. no. 56 (17) on page 37.

4. GENERAL :

Same as in expt. no. 54 (18) on page 38.

5. RESULTS :

(i) 2964 lb./ac. (ii) 407.6 lb./ac. (iii) No effect is significant. (iv) Av. yield of grain in lb./ac.

	N_0	N_1	N_2	Mean	K_0	K_1	K_2
P_0	2482	3003	3168	2884	2752	2980	2920
P_1	2761	3012	3233	3002	2930	2971	3105
P_2	2866	3053	3095	3005	3140	2994	2881
Mean	2703	3023	3165	2964	2941	2982	2969
K_0	2583	2916	3323				
K_1	2829	3054	3062				
K_2	2697	3099	3111				

S.E. of any marginal mean = 78.5 lb./ac.
S.E. of body of any table = 135.9 lb./ac.

Crop :- Paddy (*Kharif*). **Ref :- Bh. 57(98).**

Site :- Bot. Sub-Stn., Kanke. **Type :- 'M'.**

Object :—To study the effect of N, P and K and their combinations on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 22.6.1957/29.7.1957. (iv) (a) ploughings by *desi* plough. (b) Japanese method. (c) 7 srs./ac. (d) 10"×10". (e) N.A. (v) 10 C.L./ac. of F.Y.M. and green manured by *dhaincha*. (vi) BK—36 (late). (vii) Unirrigated. (viii) Weeding by Rotary hoe. (ix) 40.84". (x) 4 to 6.12.1957.

2. TREATMENTS :

Same as in expt. no. 54 (19) on page 35.

3. DESIGN :

Same as in expt. no. 57 (99) on page 38.

4. GENERAL:

(i) Fairly good. (ii) Heavy attack of helminthosporium—seed dressing was done with Agrosan G.N. Spraying copper fungicide. (iii) No. of tillers, straw and paddy yield. (iv) (a) 1954—195. (b) No. (c) Nil. (v) (a) Patna, Sabour, Pusa and Bikramganj. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 981 lb./ac. (ii) 315.3 lb./ac. (iii) Main effects of N and P are highly significant. Other effects are not significant. (iv) Av. yield of grain in lb./ac.

	N_0	N_1	N_2	Mean	K_0	K_1	K_2
P_0	843	981	997	940	954	923	944
P_1	1012	996	1091	1033	1015	1025	1060
P_2	958	951	998	969	954	969	984
Mean	938	976	1029	981	974	972	996
K_0	954	966	1003				
K_1	928	986	1003				
K_2	932	976	1080				

S.E. of any marginal mean = 60.7 lb./ac.
S.E. of body of any table = 105.1 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 58(74).**

Site :- Bot. Sub-Stn., Kanke. **Type :- 'M'.**

Object :—To study the effect of N, P, K and their combinations on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Dhaincha*. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 26.6.1958/25.7.1958. (iv) (a) 4 ploughings. (b) Japanese method. (c) 7 srs./ac. (d) 10″×10″. (e) N.A. (v) Nil. (vi) BK—36 (late). (vii) Unirrigated. (viii) One hoeing by rotary hoe and one hand weeding. (ix) 41.15″. (x) 16.12.1959.

2. TREATMENTS :

Same as in expt. no. 54(19) on page 35.

3. DESIGN :

(i) 3^3 partially confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) 122′×77′6″. (iii) 2. (iv) (a) 39′2″×7′6″. (b) 37′6″×5′10″. (v) 10″×10″. (vi) Yes.

4. GENERAL :

Same as in expt. no. 54(18) on page 38.

5. RESULTS :

(i) 3818 lb./ac. (ii) 1659 lb./ac. (iii) No effect is significant. (iv) Av. yield of grain in lb./ac.

	N_0	N_1	N_2	Mean	K_0	K_1	K_2
P_0	3011	3958	3966	3645	3637	3694	3604
P_1	3225	4040	4459	3908	3522	4056	4146
P_2	3587	3933	4180	3900	4139	3653	3908
Mean	3274	3977	4202	3818	3766	3801	3886
K_0	3415	3768	4115				
K_1	3143	4122	4138				
K_2	3264	4041	4353				

S.E. of any marginal mean = 391.0 lb./ac.
S.E. of body of any table = 677.4 lb./ac.

Crop :- Paddy. **Ref :- Bh. 56(19).**

Site :- Bot. Sub-Stn., Kanke. **Type :- 'M'.**

Object :—To study the effect of raising different G.M. crops and applying them as manures to the Paddy crop, raised along with them.

1. BASAL CONDITIONS:

(i) (a) Nil. (b) Paddy. (c) 40 lb./ac. of N as A/S and 40 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy loam. (b) N.A. (iii) 6.7.1956/N.A. (iv) (a) 4 ploughings. (b) to (d) N.A. (e) 2 to 3. (v) As per treatments. (vi) BR—4 (early *Aman*). (vii) Unirrigated. (viii) Weeding by hand. (ix) 26.35″. (x) 2.12.1956.

2. TREATMENTS:

6 G.M. crops raised along with paddy: G_0=Fallow (control), G_1=*Crot. juncea* (*sanai*), G_2=*Indigofera barbada*, G_3=*Aschynemone Americana*, G_4=*Sesbania aculeata* (*dhaincha*) and G_5=*Sesbania Speciosa.*

3. DESIGN:

(i) L. Sq. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) 30′×10′. (b) 28′×8′. (v) 1′×1′. (vi) Yes.

4. GENERAL:

(i) Paddy fair; G.M. crops poor. (ii) Nil. (iii) Grain yield. (iv) (a) 1956—contd. (modified every year). (b) and (c) No. (v) (a) Patna and Sabour. (b) Nil. (vi) and (vii) Nil.

5. RESULTS:

(i) 767 lb./ac. (ii) 149.7 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	G_0	G_1	G_2	G_3	G_4	G_5
Av. yield	717	760	749	697	740	697

S.E./mean = 61.1 lb./ac.

Crop :- Paddy. **Ref :- Bh. 57(4).**

Site :- Bot. Sub-Stn., Kanke. **Type :- 'M'.**

Object :—To study the effect of raising different G.M. crops and applying them as manures to the Paddy crop, raised along with them.

1. BASAL CONDITIONS:

(i) (a) Fallow. (b) and (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 30.6.1957. (iv) (a) N.A. (b) Paddy broadcast along with G.M. seeds and mixed with the soil by fork spade. (c) 40 srs./ac. (d) and (e) —.(v) 80 lb./ac. of P_2O_5 as Super+40 lb./ac. of N as A/S. (vi) BK—115 (early). (ix) 40.84″. (x) 27.11.1957.

2. TREATMENTS:

7 G.M. crops raised with paddy: G_0=Fallow (control), G_1=*Crotolaria juncea* (*sanai*), G_2=*Indigofera barbada*, G_3=*Aschynemone Americana*, G_4=*Sesbania Speciosa*, G_5=*Crotolaria Straita* and G_6=*Cassia Occidentalis.*

3. DESIGN:

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 6. (iv) (a) 36′×12′. (b) 34′×10′. (v) 1′×1′. (vi) Yes.

4. GENERAL:

(i) Poor. (ii) Helminthosporium attack was severe in paddy. (iii) Yield of grain. (iv) (a) 1956—contd. (modified every year). (b) No. (c) Nil. (v) (a) Sabour. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 966 lb./ac. (ii) 115.3 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	G_0	G_1	G_2	G_3	G_4	G_5	G_6
Av. yield	921	1052	1191	833	829	887	1047

S.E /mean = 47.1 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 58(73).**

Site :- Bot. Sub-Stn., Kanke. **Type :- 'M'.**

Object :—To study the effect of raising different G.M. crops and applying them as manures to the Paddy crop, raised along with them.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (ii) (a) Red laterite. (b) N.A. (iii) 21.6.1958/10.8.1958. (iv) (a) 3 ploughings by *desi* plough. (b) Broadcast. (c) 7 srs./ac. (d) and (e) —. (v) Nil. (vi) 498—2 A (late *Aman*). (vii) Unirrigated. (viii) Hoeing and weeding. (ix) 40.2". (x) 19 12.1958.

2. TREATMENTS :

7 G.M. crops raised with paddy : G_0=Fallow (control), G_1=*Crotolaria Juncea*, G_2=*Indigofera barbada*, G_3=*Aschynemone Americana*, G_4=*Sesbania Aculeta*, G_5=*Crotolaria Straita* and G_6=*Cassia Occidentalis*.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) 104'×30'. (iii) 4. (iv) (a) 30'×14'. (b) 28'×12'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Nil. (iii) Straw and grain yield. (iv) (a) 1956—1958. (modified every year). (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 800 lb./ac. (ii) 269.8 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	G_0	G_1	G_2	G_3	G_4	G_5	G_6
Av. yield	709	850	700	925	717	950	746

S.E./mean = 134.9 lb./ac.

Crop :- Paddy. **Ref :- Bh. 55(1).**

Site :- Dist. Agri. Farm, Lehria Sarai. **Type :- 'M'.**

Object :—To see the effect of potash on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Gram. (c) Nil. (ii) (a) Loam. (b) N.A. (iii) N.A./22, 23.7.1955. (iv) (a) 5 to 6 ploughings. (b) Transplanting by Japanese method ; seedlings raised by country method. (c) 7 srs./ac. (d) N.A. (e) 2 to 3. (v) Nil. (vi) BK—115(early). (vii) Unirrigated. (viii) Nil. (ix) 42.67". (x) 17.11.1955.

2. TREATMENTS :

5 manurial treatments : M_0=Control, M_1=40 lb./ac. of N as A/S, M_2=M_1+40 lb./ac. of P_2O_5 as Super, M_3=M_1+40 lb./ac. of K_2O as Mur. Pot. and M_4=M_3+40 lb./ac. of P_2O_5 as Super.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) and (b) 43.56'×25'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Attacked by *Gundli* bug (*Leptocorize vericoruis*) and controlled by dusting 5% BHC. Also attacked by leaf spot (Helminthosporium *oriza*). No control measures adopted. (iii) Height, tiller no., yield of grain and straw. (iv) (a) 1953—contd. (b) and (c) No. (v) (a) All Govt. farms. (b) N.A. (vi) Heavy floods for about 10 days. (vii) Nil.

5. RESULTS :

(i) 2372 lb./ac. (ii) 252 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	2120	2440	2380	2410	2510

S.E./mean = 126.0 lb./ac.

Crop :- Paddy (*Kharif*). **Ref :- Bh. 56(98).**

Site :- Dist. Agri. Farm, Lehria Sarai. **Type :- 'M'.**

Object :—To test the effect of potash on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) N.A./4 to 7.10.1956. (iv) (a) 4 ploughings. (b) Japanese method. (c) 10 srs./ac. (d) Between rows—6″. (e) 2 to 3. (v) Nil. (vi) BK—115. (vii) Unirrigated. (viii) One interculturing and weeding. (ix) 5.17″. (x) 4 and 5.12.1956.

2. TREATMENTS :

Same as in expt. no. 55 (1) on page 43.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 1/30 ac. (b) 1/40 ac. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain yield. (iv) (a) 1953—contd. (b) No. (c) Nil. (v) (a) As in expt. no. 55 (1) on page 43. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 2697 lb./ac. (ii) 255.9 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	1728	2900	2921	3044	2890

S.E./mean = 128.0 lb./ac.

Crop :- Paddy. **Ref :- Bh. 55(105).**

Site :- Govt. Agri. Farm, Musheri. **Type :- 'M'.**

Object :—To study the effect of growing different G.M. crops and applying them as manure to the succeeding Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fodder. (c) Nil. (ii) (a) Sandy soil. (b) N.A. (iii) N.A./12.8.1955. (iv) (a) Tracto ploughing, *desi* and Bihar ploughing. (b) Japanese method. (c) 7 srs./ac. (d) 10″×10″. (e) 2 to 3. (vr) Nil. (vi) 498—2A (late). (vii) Irrigated. (viii) Weeding by Japanese weeder. (ix) 41.05″. (x) 11.12.1955.

2. TREATMENTS :

4 G.M. crop : G_0=Fallow (control), G_1=*Dhaincha*, G_2=*Kalai* and G_3=*Moong*.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) 72′×15′. (b) 70½′×13½′. (v) 9″×9″. (vi) Yes.

4. GENERAL :

(i) Not satisfactory. (ii) Case worm, *gundli bug* ; spraying for case-worm—dusting with Gammexane for *gundli bug*. (iii) Yield of grain. (iv) (a) to (c) No. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1198 lb./ac. (ii) 222.9 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	G_0	G_1	G_2	G_3
Av. yield	1214	1290	1092	1196

S.E./mean = 99.7 lb./ac.

Crop :- Paddy.
Ref :- Bh. 55(148).
Site :- Govt. Agri. Farm, Nawadah.
Type :- 'M'.

Object :—To find out the effect of growing different G.M. crops and applying them as manure to the succeeding Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) G.M. crops as per treatments. (c) Nil. (ii) (a) Loam. (b) N.A. (iii) 11.7.1955/13, 14.8.1955. (iv) (a) 5 to 6 *desi* ploughings. (b) N.A. (c) 10 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) Nil. (vi) 498—2A. (vii) Irrigated. (viii) Weeding. (ix) 17.00″. (x) 13, 14.12.1955.

2. TREATMENTS :

4 G.M. crops preceding paddy : G_0=Control (no G.M.), G_1=*Dhaincha*, G_2=*Urid* and G_3=*Moong*. G.M. applied in *situ*.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) 60′×71′. (iii) 4. (iv) (a) N.A. (b) 60′×17′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Tiller count, yield of grain and straw. (iv) (a) to (c) No. (v) (a) Saharsa, Chianki, Kanke, Bikramganj, Purnea and Musheri. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1373 lb./ac. (ii) 201.4 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	G_0	G_1	G_2	G_3
Av. yield	1318	1318	1428	1428

S.E./mean =100.7 lb./ac.

Crop :- Paddy *(Kharif)*.
Ref :- Bh. 59(104).
Site :- Govt. Agri. Farm, Nawadah.
Type :- 'M'.

Object :—To find out the effect of growing different G.M. crops and applying them as manure to the succeeding Paddy crop.

1. BASAL CONDITIONS :

(i) (a) and (b) As per treatments. (c) Nil. (ii) (a) Loam. (b) N.A. (iii) N.A./8.8.1959. (iv) (a) 3 ploughings. (b) Japanese method. (c) 8 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) Nil. (vi) 498—2A. (vii) Unirrigated. (viii) 1 weeding. (ix) 41.65″. (x) 11.12.1959.

2. TREATMENTS :

5 G.M. crops preceding paddy : G_0=No G.M., G_1=*Dhaincha*, G_2=*Kalai*, G_3=*Moong* and G_4=Sannhemp. G.M. applied in *situ*.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) N.A. (b) 60½′×12′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1959—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1586 lb./ac. (ii) 173.5 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	G_0	G_1	G_2	G_3	G_4
Av. yield	1358	1740	1506	1611	1716

S.E./mean = 77.6 lb./ac.

Crop :- Paddy. **Ref :- Bh. 55(139).**

Site :- Govt. Agri. Farm, Nawadah. **Type :- 'M'.**

Object :—To find out the effect of paira crops as G.M. crops on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Wheat. (c) N.A. (ii) (a) Loam. (b) N.A. (iii) N.A./28 and 29.7.1955. (iv) (a) 5 to 6 *desi* ploughings. (b) N.A. (c) 10 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) 30 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super. (vi) 498—2A (late). (vii) Irrigated. (viii) 1 weeding. (ix) 17.00″. (x) 13, 14.12.1955.

2. TREATMENTS :

All combinations of (1) and (2)+1 control (no *paira* crop)
(1) 2 kinds of *paira* crops : G_1=Gram and G_2=*Khesari*.
(2) 2 levels of turning in of *paira* crop : L_0=No turning and L_1=Turning of *paira* crop.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) 54′×100′. (iii) 4. (iv) (a) and (b) 54′×20′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Tiller count ; yield of grain and straw. (iv) (a) 1955—1956. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3327 lb./ac. (ii) 669.8 lb./ac. (iii) No effect is significant. (iv) Av. yield of grain lb./ac.

Control = 2696 lb./ac.

	G_1	G_2	Mean
L_0	3381	3568	3475
L_1	3485	3505	3495
Mean	3433	3537	3485

S.E. of G or L marginal mean = 236.8 lb./ac.
S.E. of body of table or control mean = 334.9 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 56(188).**

Site :- Govt. Agri. Farm, Nawadah. **Type :- 'M'.**

Object :—To find out the effect of paira crops as G.M. crops on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) and (b) N.A. (iii) N.A./19, 20.8.1956. (iv) (a) 4 ploughings, burning of G.M. *paira* crop as per treatments. (b) Japanese method. (c) 8 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) 20 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super. (vi) 498—2A. (vii) Unirrigated. (viii) 1 weeding. (ix) 30.26″. (x) 6, 7.12.1956.

2. TREATMENTS :

Same as in expt. no. 55(139) on page 46.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 54′×20′. (b) 53′×19′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1955—1956. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2491 lb./ac. (ii) 163.8 lb./ac. (iii) No effect is significant. (iv) Av. yield grain in lb./ac.

Control = 2402 lb./ac.

	G_1	G_2	Mean
L_0	2472	2572	2522
L_1	2414	2597	2506
Mean	2443	2585	2514

S.E. of G or L marginal mean = 57.9 lb./ac.
S.E. of body of table or control mean = 81.9 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 57(118).**

Site :- Govt. Agri. Farm, Netarhat. **Type :- 'M'.**

Object :—To compare the effect of C/N with that of A/S on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Red laterite. (b) N.A. (iii) 7.6.1957/22.7.1957. (iv) (a) 5 ploughings. (b) Japanese method. (c) 10 srs./ac. (d) 10″×10″. (e) 3. (v) Nil. (vi) CH—10. (vii) Unirrigated. (viii) Nil. (ix) 18.07″. (x) 7, 8.10.1957.

2. TREATMENTS :

All combinations of (1) and (2)+a control
(1) 2 sources of N : S_1=C/N and S_2=A/S.
(2) 3 manurial treatments : M_1=50 lb./ac. of N, $M_2=M_1+40$ lb./ac. of P_2O_5 as Super, $M_3=M_2+40$ lb./ac. of K_2O as Mur. Pot.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 30′×18′3″. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Tiller count, grain and straw yield. (iv) (a) 1957—N.A. (b) No. (c) Nil. (v) Putida. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1839 lb./ac. (b) (ii) 146.8 lb./ac. (iii) No effect is significant. (iv) Av. yield of grain in lb./ac.

Control = 1666 lb./ac.

	M_1	M_2	M_3	Mean
S_1	1722	1847	1833	1801
S_2	1972	1916	1916	1935
Mean	1847	1882	1875	1868

S.E. of S marginal mean = 48.9 lb./ac.
S.E. of M marginal mean = 59.9 lb./ac.
S.E. of body of table or control mean = 84.8 lb./ac.

Crop :- Paddy (*Kharif*). **Ref :- Bh. 56(153).**

Site :- Govt. Agri. Farm, Netarhat. **Type :- 'M'.**

Object :—To test the effect of liming acid soils on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Red laterite. (b) N.A. (iii) 28.7.1956. (iv) (a) 4 ploughings by *desi* plough. (b) Japanese method. (c) 10 srs./ac. (d) 10″×10″. (e) 3. (v) Nil. (vi) Upland variety. (vii) Unirrigated. (viii) Hoeing and weeding (ix) 43.09″. (x) 4.12.1956.

2. TREATMENTS :

6 manurial treatments : M_0=Control, M_1=40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super+40 lb./ac. of K_2O as Mur. Pot., M_2=800 lb./ac. of lime, M_3=1600 lb./ac. of lime, M_4=2400 lb./ac. of lime and $M_5=M_1+M_4$.

Lime was applied one month before transplanting.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) 240′×32′. (iii) 5. (iv) (a) 40½′×32′. (b) 37½′×29′. (v) 1.5′×1.5′. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) Nil. (iii) Straw and grain yield. (iv) (a) 1956—N.A. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 133 lb./ac. (ii) 53.4 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	77	157	126	151	148	140

S.E./mean = 23.9 lb./ac.

Crop :- Paddy. **Ref :- Bh. 55(23).**

Site :- Govt. Agri. Farm, Netarhat. **Type :- 'M'.**

Object :—To test the effect of potash on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Soyabean. (c) Nil. (ii) (a) Clayey loam. (b) N.A. (iii) 24.6.1955/24.7.1955. (iv) (a) 2 ploughings and 1 puddling by *desi* plough. (b) Transplanting. (c) 10 srs./ac. (d) 9″×9″. (e) 3. (v) Nil. (vi) CH—10 (early). (vii) Unirrigated. (viii) 2 weedings. (ix) 49.0″. (x) 23.10.1955.

2. TREATMENTS :

5 manurial treatments: M_0=Control, M_1=40 lb./ac. of N as A/S, $M_2=M_1+40$ lb./ac. of P_2O_5 as Super, $M_3=M_1+40$ lb./ac. of K_2O as Mur. Pot. and $M_4=M_3+40$ lb./ac. of P_2O_5 as Super.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 40′×34′. (b) 36′×30′. (v) 2′×2′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Attack of paddy blast ; damage severe—no control measures were taken. (iii) Yield of grain and straw, height at maturity and no. of tillers. (iv) (a) No. (b) and (c) —. (v) (a) At many research stations in Bihar. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 542 lb./ac. (ii) 193.8 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	650	520	586	503	450

S.E./mean = 96.9 lb./ac.

Crop :- Paddy. **Ref :- Bh. 55(25).**

Site :- Govt. Agri. Farm, Netarhat. **Type :- 'M'.**

Object :—To test the effect of phosphatic fertiliser on succeeding Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Vegetables. (c) Compost at 60 mds./ac. applied in pits+Super at 1½ mds./ac. (ii) (a) Laterite clay. (b) N.A. (iii) 23.6.1955/27.7.1955. (iv) (a) 2 ploughings and one puddling by *desi* plough (b) Transplanting. (c) 10 srs./ac. (d) 9″×9″. (e) 3. (v) Nil. (vi) CH—10 (early). (vii) Unirrigated. (viii) 2 weedings. (ix) 49.10″. (x) 24.11.1955.

2. TREATMENTS :

4 manurial treatments: M_0=Control, M_1=40 lb./ac. of P_2O_5 as Super applied to paddy crop, M_2=G.M. crop of *sanai* grown and applied as manure to paddy and $M_3=M_2+40$ lb./ac. of P_2O_5 as Super applied to G.M. crop.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) N.A. (b) 52.4′×20.78′. (v) 2′ path alround the plot. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) Nil. (iii) Weight of straw and grain, height at maturity and tiller no. (iv) (a) No. (b) and (c) —. (v) (a) and (b) N.A. (vi) Nil. (vii) Due to field being on slope, it could not accumulate water—the result being the excessive growth of weed—hence the poor crop.

5. RESULTS :

(i) 81 lb./ac. (ii) 33.8 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3
Av. yield	75	92	55	102

S.E./mean = 15.1 lb./ac.

Crop :- Paddy. **Ref :- Bh. 55(26).**

Site :- Govt. Agri. Farm, Netarhat. **Type :- 'M'.**

Object :—To test the effect of growing G.M. crops and applying them as manure to the succeeding Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Maize+Soyabean. (c) 1½ mds./ac. of each of A/S and Super. (ii) (a) Clayey loam. (b) N.A. (iii) 23.6.1955/18.7.1955. (iv) (a) 2 ploughings and one puddling by *desi* plough. (b) Transplanting. (c) 10 srs./ac. (d) 9″×9″. (e) 3. (v) Nil. (vi) CH—10 (early). (vii) Unirrigated. (viii) 2 weedings. (ix) 49.10″. (x) 25.11.1955.

2. TREATMENTS :

5 G.M. crops preceding paddy : G_0=Fallow (control), G_1=*Dhaincha*, G_2=*Kalai*, G_3=*Moong* and G_4=*Guar*. G.M. applied in *situ*.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) N.A. (b) 1/40 ac. (v) One row left. (vi) Yes.

4. GENERAL :

(i) Healthy. (ii) Nil. (iii) Weight of grain and straw, no. of tillers and height at maturity. (iv) (a) No. (b) and (c) —. (v) (a) and (b) N.A. (vi) Due to heavy rains in June and July, 1955, the green manure crops did not grow well. (vii) Nil.

5. RESULTS :

(i) 448 lb./ac. (ii) 123.7 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	G_0	G_1	G_2	G_3	G_4
Av. yield	570	373	285	455	557

S.E./mean = 55.3 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 57(42).**

Site :- Agri. Res. Instt., Patna. **Type :- ‘M’.**

Object :—To test the effect of different kinds of phosphates on Paddy yield.

1. BASAL CONDITIONS

(i) (a) Nil. (b) Gram. (c) N.A. (ii) (a) Heavy clay. (b) Refer soil analysis, Patna. (iii) N.A./3, 4.8.1957. (iv) (a) 4 ploughings. (b) Japanese method. (c) 7 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) Nil. (vi) BK—115. (vii) Irrigated. (viii) Hoeing once by Japanese hoe and one weeding. (ix) 9.90″. (x) 26, 27.11.1957.

2. TREATMENTS :

6 manurial treatments : M_0=Control, M_1=40 lb./ac. of N as A/S, M_2=M_1+Super M_3=M_1+B.M., M_4=M_1+Rock Phos. and M_5=M_1+Di-cal. Phos.

All phosphates supply 40 lb./ac. of P_2O_5.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 5. (iv) (a) 56′×22′. (b) 53′10″×20′6″. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1957—1958. (b) Yes. (c) Nil. (v) (a) N.A. (b) —. (vi) and (vii) Nil.

5. RESULTS :

(i) 1853 lb./ac. (ii) 396 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	1591	2050	1965	1738	1899	1875

S.E./mean = 177 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 58(149).**

Site :- Agri. Res. Instt., Patna. **Type :- 'M'.**

Object :—To test the comparative effect of different kinds of phosphates on Paddy yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Gram. (c) N.A. (ii) (a) Heavy clay. (b) Refer soil analysis, Patna. (iii) N.A./11 to 13.8.1958. (iv) (a) 4 ploughings. (b) Japanese method. (c) 7 srs./ac. (d) 10″×12″. (e) 3. (v) Nil. (vi) BK—115. (vii) Irrigated. (viii) One weeding. (ix) 5.0″. (x) 20.11.1958.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 57 (42) on page 50.

5. RESULTS :

(i) 1902 lb./ac. (ii) 277.8 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	1675	2078	1762	1989	1932	1979

S.E./mean = 124.3 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- 59(85).**

Site :- Agri. Res. Instt., Patna. **Type :- 'M'.**

Object :—To test the comparative effects of different nitrogeneous fertilizers on Paddy yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Gram. (c) Nil. (ii) (a) Heavy clay. (b) Refer soil analysis, Patna. (iii) N.A./27 to 31.8.1959. (iv) (a) Ploughing by *desi* plough. (b) Japanese method. (c) 10 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) Nil. (vi) BK—36. (vii) Unirrigated. (viii) 2 weedings by rotary hoe. (ix) 21.92″. (x) 15 to 18.12.1959.

2. TREATMENTS :

All combinations of (1) and (2)+2 extra treatments

(1) 2 levels of N : L_1=25 and L_2=50 lb./ac.
(2) 6 sources of N : S_1=A/S, S_2=Urea, S_3=A/S/N, S_4=C/A/N, S_5=A/C and S_6=Urea (F.D.B.T.).
Extra treatments : C_1=Control and C_2=30 lb./ac. of P_2O_5 as Super+30 lb./ac. of K_2O as Mur. Pot.

3. DESIGN :

(i) R.B.D. (ii) (a) 14. (b) N.A. (iii) 3. (iv) (a) 35′×34½′. (b) 33′×33′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Lodged on 3.11.1959. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1959—1961. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1868 lb./ac. (ii) 201.0 lb./ac. (iii) Main effect of S alone is highly significant. (iv) Av. yield of grain in lb./ac.

C_1=1618 lb./ac., C_2=2043 lb./ac.

	S_1	S_2	S_3	S_4	S_5	S_6	Mean
L_1	2002	1851	1783	1646	2030	1591	1817
L_2	2043	2208	1659	1618	2167	1892	1931
Mean	2023	2030	1721	1632	2099	1742	1874

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S.E. of L marginal mean = 47.4 lb./ac.
S.E. of S marginal mean = 82.1 lb./ac.
S.E. of body of table = 116.1 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 57(39).**

Site :- Agri. Res. Instt., Patna. **Type :- 'M'.**

Object :—To test the effect of Gypsum on Paddy yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Paira* gram. (c) N.A. (ii) (a) Heavy clay. (b) Refer soil analysis, Patna. (iii) N.A./5, 7.8.1957. (iv) (a) 4 ploughings. (b) Japanese method. (c) 7 srs/ac. in seed bed. (d) 10″×10″. (e) 2 to 3. (v) Nil. (vi) BK—115. (vii) Irrigated. (viii) Hoeing by Japanese hoe and one weeding. (ix) 9.90″. (x) 22.11.1957,

2. TREATMENTS :

4 manurial treatments : M_0=Control, M_1=40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super, M_2=Gypsum at 5 mds/ac. and $M_3=M_1+M_2$.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) 18′×17′. (b) 17′×16′. (v) 6″×6″. (v) Yes.

4. GENERAL :

(i) Partial lodging. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1957—1958. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2223 lb./ac. (ii) 783 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3
Av. yield	1878	2009	2833	2174

S.E./mean = 350.0 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 58(161).**

Site :- Agri. Res. Instt., Patna. **Type :- 'M'.**

Object :—To test the effect of Gypsum on Paddy yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Gram. (c) N.A. (ii) (a) Heavy clay. (b) Refer soil analysis, Patna. (iii) N.A./10.8.1958. (iv) (a) 4 ploughings. (b) Japanese method. (c) 7 srs/ac. (d) 12″×10″. (e) 3. (v) Nil. (vi) BK—115. (vii) Irrigated. (viii) 1 weeding. (ix) N.A. (x) 19.11.1958.

2. TREATMENTS and 3. DESIGN

Same as in expt. no. 57(39) above.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1957—1958. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1922 lb./ac. (ii) 207.5 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3
Av. yield	1681	2060	1730	2216

S.E./mean = 92.8 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 57(41).**
Site :- Agri. Res. Instt., Patna. **Type :- 'M'.**

Object :—To test the effect of town compost on soil fertility and Paddy yield.

BASAL CONDITIONS :

(i) (a) Nil. (b) Gram. (c) N.A. (ii) (a) Heavy clay. (b) Refer soil analysis, Patna. (iii) N.A./25 to 27.7.1957. (iv) (a) 4 ploughings. (b) Japanese method. (c) 7 srs./ac. (d) 12"×10". (e) 2 to 3. (v) Nil. (vi) BK—115. (vii) Irrigated. (viii) Weeding once. (ix) 9.9". (x) 19, 20.11.1957.

2. TREATMENTS :

6 manurial treatments : M_0=Control, M_1=10 lb./ac. of N as compost+30 lb./ac. of N as A/S, M_2=20 lb./ac. of N as compost+20 lb./ac. of N as A/S, M_3=30 lb./ac. of N as compost+10 lb./ac. of N as A/S, M_4=40 lb./ac. of N as compost and M_5=40 lb./ac. of N as A/S.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 5. (iv) (a) 37'×28'8". (b) 35'8"×27'4". (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1957—1958. (b) No. (c) Nil. (iv) to (vii) Nil.

5. RESULTS :

(i) 2111 lb./ac. (ii) 207 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	2078	1957	2162	1893	2362	2205

S.E./mean = 177 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 58(162).**
Site :- Agri. Res. Instt., Patna. **Type :- 'M'.**

Object :—To test the effect of town compost on soil fertility and Paddy yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Gram. (c) N.A. (ii) (a) Heavy clay. (b) Refer soil analysis, Patna. (iii) N.A./7 to 11.8.1958. (iv) (a) 4 ploughings. (b) Japanese method. (c) 7 srs./ac. (d) 9"×9". (e) 3. (v) Nil. (vi) BK—115. (vii) Irrigated. (viii) 1 weeding. (ix) N.A. (x) 16 to 18.11.1958.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 57(41) above.

5. RESULTS :

(i) 1918 lb./ac. (ii) 348.2 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	1673	2281	1940	1977	1885	1751

S.E./mean = 155.7 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 57(40).**
Site :- Agri. Res. Instt., Patna. **Type :- 'M'.**

Object :—To test the effect of Potash on Paddy yield.

1. BASAL CONDITIONS :

(i) (a) Paddy—Gram—Paddy. (b) Gram. (c) N.A. (ii) (a) Heavy clay. (b) Refer soil analysis, Patna. (iii) N.A./31.7.1957. (iv) (a) 4 ploughings. (b) Japanese method. (c) 7 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) Nil. (vi) BK—115. (vii) Irrigated. (viii) Hoeing and weeding. (ix) 9.90″. (x) 20, 21.11.1957.

2. TREATMENTS :

5 manurial treatments : M_0=Control, M_1=40 lb./ac. of N as A/S, M_2=M_1+40 lb./ac. of P_2O_5 as Super, M_3=M_1+40 lb./ac. of K_2O as Mur. Pot. and M_4=M_2+40 lb./ac. of K_2O as Mur. Pot.

3. DESIGN :

(i) R B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 37′6″×28′6″. (b) 36′×27′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. Lodging at a later stage. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1957—1958. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2309 lb./ac. (ii) 170 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	2109	2028	2593	2489	2328

S.E./mean = 85 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 58(160).**

Site :- Agri. Res. Instt., Patna. **Type :- 'M'.**

Object :—To test the effect of Potash on Paddy yield.

1. BASAL CONDITIONS :

(i) (a) Nil (b) Gram. (c) N.A. (ii) (a) Heavy clay. (b) Refer soil analysis, Patna. (iii) N.A./6 to 8.8.1958. (iv) (a) 3 ploughings. (b) Japanese method. (c) 7 srs./ac. (d) 9″×9″. (e) 3. (v) Nil. (vi) BK—115. (vii) Irrigated. (viii) 1 weeding. (ix) 4.00″. (x) 16.11.1958.

2. TREATMENTS :

Same as in expt. no. 57(40) on page 53.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 37½′×28′. (b) 36′×27′. (v) 9″×6″. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1957—1958. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1955 lb./ac. (ii) 235.4 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	1743	1956	1898	1991	2187

S.E./mean = 117.7 lb./ac.

Crop :- Paddy. **Ref :- Bh. 55(149).**

Site :- Agri. Res. Instt., Patna. **Type :- 'M'.**

Object :—To find out the optimum dose of N, P and K for Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Heavy clay. (b) Refer soil analysis, Patna. (iii) 14.6.1955/22, 23.7.1955. (iv) (a) 3 ploughings and puddling. (b) Japanese method. (c) 10 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) 200 mds./ac. of F.Y.M.+G.M. (*dhaincha*). (vi) BK—36 (late). (vii) Irrigated. (viii) Weeding. (ix) 45.21″. (x) 8.12.1955.

2. TREATMENTS :

All combinations of (1), (2) and (3).

(1) 3 levels of N as A/S : $N_0=0$, $N_1=40$ and $N_2=80$ lb./ac.
(2) 3 levels of P_2O_5 as Super : $P_0=0$, $P_1=40$ and $P_2=80$ lb./ac.
(3) 3 levels of K_2O as Mur. Pot. : $K_0=0$, $K_1=40$ and $K_2=80$ lb./ac.

3. DESIGN :

(i) 3^3 confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) 88′×91′. (iii) 2. (iv) (a) 12′×8′. (b) 10′×6′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Good ; crop lodged on 10.12.1955. (ii) Nil. (iii) Yield of grain. (iv) (a) 1955—1958. (b) No. (c) Nil. (v) (a) Bikramganj, Sabour and Kanke. (b) Nil. (vi) and (vii) The lodging took place on 10.11.1955 after grain setting, so it did not affect the yield.

5. RESULTS :

(i) 3168 lb./ac. (ii) 447.0 lb./ac. (iii) Main effects of N, P and N×P×K interaction are significant. N×K interaction is highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	Mean	K_0	K_1	K_2
N_0	2828	2995	3675	3166	3373	2844	3282
N_1	3312	3479	3328	3373	3025	3585	3509
N_2	2874	2844	3176	2965	3328	2965	2602
Mean	3005	3106	3393	3168	3242	3131	3131
K_0	3207	2904	3615				
	2919	3161	3312				
	2889	3252	3252				

S.E. of any marginal mean = 105.4 lb./ac.
S.E. of body of any table = 182.5 lb./ac.

Crop :- Paddy (*Kharif*). **Ref :- Bh. 56(243).**
Site :- Agri. Res. Instt., Patna. **Type :- 'M'.**

Object :—To find out the optimum dose of N, P and K for Paddy.

1. BASAL CONDITIONS:

(i) (a) Nil. (b) Paddy. (b) N.A. (ii) (a) Heavy clay. (b) Refer soil analysis, Patna. (iii) 9.6.1956/ 11.7.1956. (iv) (a) 4 ploughings by *desi* plough. (b) Japanese method. (c) 7 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) Nil. (vi) BK—36 (late). (vii) Irrigated. (viii) 2 weedings. (ix) 29.11″. (x) 8.11.1956.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 55 (149) on page 54.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1955—1958. (b) No. (c) Nil. (v) (a) Sabour, Kanke and Pusa. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1933 lb./ac. (ii) 294.6 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	Mean	K_0	K_1	K_2
N_0	2057	2012	1974	2014	1928	1815	2299
N_1	1959	1709	1853	1840	1891	1792	1833
N_2	1876	1996	1959	1944	1838	2034	1959
Mean	1964	1906	1929	1933	1885	1881	2032
K_0	1860	2019	1777				
K_1	1808	1800	2034				
K_2	2224	1898	1974				

S.E. of any marginal mean = 69.4 lb./ac.
S.E. of body of any table = 120.3 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 57(193).**

Site :- Agri. Res. Instt., Patna. **Type :- 'M'.**

Object :—To find the optimum dose of N, P and K for Paddy.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) *Dhaincha*. (c) Nil. (ii) (a) Heavy clay. (b) Refer soil analysis, Patna. (iii) N.A./3.8.1957. (iv) (a) 4 ploughings by *desi* plough. (b) Japanese method. (c) 10 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) G.M. as *dhaincha*+200 mds./ac. of F.Y.M. (vi) BK—36 (late). (vii) Unirrigated. (viii) Weeding and hoeing. (ix) 11.69″. (x) 10.12.1957.

2. TREATMENTS :

Same as in expt. no. 55(149) on page 54.

3. DESIGN :

(i) 3^3 confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) N.A. (iii) 2. (iv) (a) 12′×8′. (b) 10½′×6⅓′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1955—1958, (b) No. (c) Nil. (v) (a) Sabour, Kanke and Bikramganj. (b) Nil. (vi) Nil. (vii) —.

5. RESUSTS :

(i) 3819 lb./ac. (ii) 641.3 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	Mean	K_0	K_1	K_2
N_0	3564	3397	3577	3513	3647	3605	3286
N_1	3806	3896	4250	3984	3848	4146	3959
N_2	3938	4278	3661	3959	3889	3952	4035
Mean	3769	3857	3829	3819	3795	3901	3760
K_0	3827	3667	3890				
K_1	3931	3786	3986				
K_2	3550	4118	3612				

S.E. of any marginal mean = 151.2 lb./ac.
S.E. of body of any table = 261.8 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 58(311).**

Site .- Agri. Res. Instt., Patna. **Type :- 'M'.**

Object : –To find ont the optimum dose of N, P and K for Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Heavy clay. (b) Refer soil analysis, Patna. (iii) N.A./7.8.1958. (iv) (a) 4 ploughings by *desi* plough. (b) Japanese method. (c) 20 lb./ac. (d) 10″×10″. (e) 2 to 3. (v) G.M. by *dhaincha*. (vi) BK—36 (late). (vii) Irrigated. (viii) Weeding and hoeing once. (ix) 32.57″. (x) 9.12.1958.

2. TREATMENTS :

Same as in expt. no. 55(149) on page 54.

3. DESIGN :

(i) 3^3 confd. (NPK^2 and NP^2K^2 (partially confd.). (ii) (a) 9 plots/block ; 3 blocks/replication. (b) N.A. (iii) 2. (iv) (a) 12′×8′. (b) 10′4″×6′9″. (v) N.A. (vi) Yes.

4. GENERAL ;

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) 1955—1958. (b) No. (c) Nil. (v) (a) Sabour, Kanke and Bikramganj. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 3695 lb./ac. (ii) 737.9 lb./ac. (iii) Main effect of N alone is highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	Mean	K_0	K_1	K_2
N_0	4139	4399	4243	4260	4347	4295	4139
N_1	3891	3527	3748	3722	3709	3228	4230
N_2	3397	2733	3176	3102	3072	2928	3306
Mean	3809	3553	3722	3695	3709	3484	3892
K_0	3918	3670	3540				
K_1	3527	3488	3436				
K_2	3983	3501	4191				

S.E. of any marginal mean = 173.9 lb./ac.
S.E. of body of any table = 301.2 lb./ac.

Crop :- Paddy. **Ref :- Bh. 59(79).**

Site :- Govt. Agri. Farm, Peeprakothi. **Type :- 'M'.**

Object :—To test the effects of different kinds of phosphates on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Oat and pea for fodder. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) N.A./25.8.1959. (iv) (a) 3 ploughings by Bihar senior plough, one ploughing by country plough. (b) Japanese method. (c) 8 srs./ac. (d) 10″×10″. (e) 3. (v) Nil. (vi) BK—115 (early). (vii) Irrigated. (viii) One weeding and interculturing. (ix) 19.11″. (x) 3.12.1959.

2. TREATMENTS

6 manurial treatments M_0= control, M_1=40 lb./ac. of N as A/S, M_2=M_1+Super, M_3=M_2+B.M. M_4=M_1+Rock Phos. and M_5=M_1+Dical. Phos.

P_2O_5 applied at 40 lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 5. (iv) (a) 42′4″×30′. (b) 40′4″×27′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Tiller count ; grain and straw weight. (iv) (a) 1959—N.A. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 904 lb./ac. (ii) 389.0 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	705	805	1046	1242	634	994

S.E./mean = 174.0 lb./ac.

Crop :- Paddy ***(Kharif).*** **Ref :- Bh. 56(91).**

Site :- Govt. Agri. Farm, Peeprakothi. **Type :- 'M'.**

Object :—To study the effect of growing G.M. crops and applying them to the succeeding Paddy crop.

1. BASAL CONDITIONS :

(i) (a) G.M.—Paddy. (b) As per treatments. (c) 2½ mds./ac. of Super and 2½ mds./ac. of A/S. (ii) (a) Sandy loam. (b) N.A. (iii) N.A./11.8 1956. (iv) (a) One ploughing by Bihar senior plough, twice by country plough, puddling and beaming. (b) Transplanting. (c) to (e) N.A. (v) Nil. (vi) 498—2A (late). (vii) Irrigated. (viii) One weeding by *khurpi* (hand), once by Japanese puddlers and intercluturing by country plough. (ix) N.A. (x) 21, 22.10.1956.

2. TREATMENTS :

G.M. crops : G_0=Fallow (control), G_1=*Dhaincha*, G_2=*Kalai* and G_3=*Moong*.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) 78′×62′5″. (iii) 5. (iv) (a) 20′×62′5″. (b) 18′×60′5″. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Slight attack of *gundli* bug was noticed and dusting was done with BHC 5%. (iii) Tiller count, height measurement and grain yield. (iv) (a) 1956—1959. (b) No. (c) Nil. (v) and (vi) Nil. (vii) The expt. was not conducted in 1957 and in 1959 it failed.

5. RESULTS :

(i) 772 lb./ac. (ii) 227.4 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	G_0	G_1	G_2	G_3
Av. yield	676	932	703	778

S.E./mean = 101.7 lb./ac.

Crop :- Paddy. **Ref :- Bh. 58(103).**

Site :- Govt. Agri. Farm, Peeprakothi. **Type :- 'M'.**

Object :—To study the effect of growing G.M. crops and applying them to the succeeding Paddy crop.

1. BASAL CONDITIONS :

(i) (a) G.M.—Paddy. (b) As per treatments. (c) 7½ mds./ac. of castor cake, and 3⅛ mds./ac. of Super. (ii) (a) Sandy loam. (b) N.A. (iii) 19.6.1958/31.7.1958. (iv) (a) Two ploughings by Bihar senior plough, twice bv country plough and once by the cultivator. (b) Japanese method. (c) N.A. (d) 10″×10″. (e) N.A. (v) Nil. (vi) 498—2A (late). (vii) Unirrigated. (viii) One weeding by *khurpi* (hand), and twice by Japanese puddler. (ix) 35.94″. (x) 17.12.1958.

2. TREATMENTS :

5 G.M. crops : M_0=Fallow (control), M_1=*Dhaincha*, M_2=*Kalai*, M_3=*Moong* and M_4=*Sanai.*

3. DESIGN ;

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) 29′×42′4″. (b) 27′×40′4″. (v) 1 alround the plot. (vi) Yes.

4. GENERAL :

(i) Growth was fair, but it lodged on 15.12.1958 due to strong wind. (ii) Seedlings were affected by thrips and it recovered itself due to rain. (iii) Tiller count and height measurement ; yield of grain and straw. (iv) (a) 1956—1959. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2660 lb./ac. (ii) 190.9 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	2691	2715	2684	2588	2621

S.E./mean = 85.4 lb./ac.

Crop :- Paddy (*Kharif*). **Ref :- Bh. 58(198).**

Site :- Dist. Agri. Farm, Purnea. **Type :- 'M'.**

Object :—To compare the effects of C/N and A/S on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) Nil. (ii) Sandy loam. (b) N.A. (iii) N.A./2.8.1958. (iv) (a) 4 ploughings. (b) Japanese method. (c) 17 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) Nil. (vi) BR—34 (early). (vii) 2 irrigations. (viii) 2 weedings. (ix) and (x) N.A.

2. TREATMENTS :

All combinations of (1) and (2)+a control.

(1) 2 sources of N : S_1=A/S, S_2=C/N.

(2) 4 manurial treatments : M_1=25 lb./ac. of N, M_2=50 lb./ac. of N, M_3=50 lb./ac. of N+40 lb./ac. of P_2O_5 as Super and M_4=M_3+40 lb./ac. of K_2O as Mur. Pot.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 3. (iv) (a) 32⅔′×22′. (b) 29⅔′×19′. (v) 1½′ alround the plot. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1958—N.A. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2643 lb./ac. (ii) 451.7 lb./ac. (iii) No effect is significant. (iv) Av. yield of grain in lb./ac.

Control = 2354 lb./ac.

	M_1	M_2	M_3	M_4	Mean
S_1	2776	2426	2380	2673	2564
S_2	2832	2809	2340	3146	2794
Mean	2804	2618	2385	2910	2679

S.E. of S marginal mean = 130.4 lb./ac.
S.E. of M marginal mean = 184.4 lb./ac.
S.E. of body of S×M table = 260.8 lb./ac.

Crop :- Paddy (*Kharif*). **Ref :- Bh. 58(184).**

Site :- Distt. Agri. Farm, Purnea. **Type :- 'M'.**

Object :—To study the effect of growing different G.M. crops and applying them as manures to the succeeding Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) As per treatments. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) N.A./5.8.1958. (iv) (a) 3 ploughings and puddling. (b) Japanese method. (c) 8 srs./ac. (d) 10"×10". (e) —. (v) Nil. (vi) 498—2A. (vii) Irrigated. (viii) 2 weedings. (ix) 47.95". (x) 26.12.1958.

2. TREATMENTS :

5 G.M. crops : G_0=Fallow (control), G_1=*Dhaincha*, G_2=*Kalai*, G_3=*Moong* and G_4=*Sanai*.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) 31½'×26½'. (b) 28½'×23½'. (v) 1½' alround the plot. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1958—1959. (b) Yes. (c) Nil. (v) to (vii) N.A.

5. RESULTS :

(i) 1434 lb./ac. (ii) 587.5 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	G_0	G_1	G_2	G_3	G_4
Av. yield	1761	1271	1703	1465	971

S.E./mean = 262.7 lb./ac.

Crop :- Paddy (*Kharif*). **Ref :- Bh. 59(123).**

Site :- Distt. Agri. Farm, Purnea. **Type :- 'M'.**

Object :—To study the effect of growing different G.M. crops and applying them as manures to the succeeding Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) N.A./9.8.1959. (iv) (a) N.A. (b) Japanese method. (c) 8 srs./ac. (d) 10"×10". (e) 2 to 3. (v) Nil. (vi) 498—2A. (vii) Irrigated. (viii) 2 weedings. (ix) 32.46". (x) 10.12.1959.

2. TREATMENTS :

Same as expt. no. 58 (184) above.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) 36'×25'. (b) 33'×22'. (v) 1½' alround the plot. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Serious attack of leaf-spot. (iii) Grain and straw yield. (iv) (a) 1958—1959. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1798 lb./ac. (ii) 282.9 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	G_0	G_1	G_2	G_3	G_4
Av. yield	1703	1830	1883	1601	1975

S.E./mean = 126.5 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 58(292).**

Site :- Agri. Res. Instt., Pusa. **Type :- 'M'.**

Object :—To find out the optimum dose of N, P and K for Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Berseem. (b) Nil. (ii) (a) Clay loam. (b) N.A. (iii) 10.6.1958/30.7.1958. (iv) (a) 3 ploughings by *desi* plough. (b) Japanese method. (c) 10 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) Nil. (vi) BR—7 (late). (vii) Irrigated. (viii) 3 weedings by *khurpi*. (ix) 41.49″. (x) 3.12.1958.

2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 3 levels of N as A/S : $N_0=0$, $N_1=40$ and $N_2=80$ lb./ac.
(2) 3 levels of P_2O_5 as Super : $P_0=0$, $P_1=40$ and $P_2=80$ lb./ac.
(3) 3 levels of K_2O as Mur. Pot. : $K_0=0$, $K_1=40$ and $K_2=80$ lb./ac.

3. DESIGN :

(i) 3^3 partially confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) N.A. (iii) 2. (iv) (a) 34′8″×7′8″. (b) 33′×6′. (v) 1 row on all sides. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Attack of helmintosporium—control measures nil. (iii) Grain and straw yield. (iv) (a) and (b) N.A. (c) Nil. (v) (a) Sabour, Kanke and Bikramganj. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1565 lb./ac. (ii) 82.3 lb./ac. (iii) Main effect of N and interaction N×P are significant. No other effect is significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	1697	1823	1530	1832	1546	1672	1683
N_1	1631	1429	1594	1466	1557	1631	1551
N_2	1557	1402	1425	1319	1493	1571	1461
Mean	1628	1551	1516	1539	1532	1625	1565
K_0	1662	1626	1329				
K_1	1582	1452	1562				
K_2	1640	1576	1658				

S.E. of any marginal mean = 19.4 lb./ac.
S.E. of body of any table = 33.6 lb./ac

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 54(31).**

Site :- Agri. Res. Instt., Pusa. **Type :- 'M'.**

Object :—To study the effect of micro-nutrients on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Clay loam. (b) N.A. (iii) N.A./28.7.1954. (iv) (a) Puddling. (b) Transplanting. (c) to (e) N.A. (v) and (vi) N.A. (vii) Irrigated. (viii) 1 weeding. (ix) 38.35". (x) 21 to 23.12.1954.

2. TREATMENTS :

11 manurial treatments : M_0=Control, M_1=40 lb./ac. of N as A/S+60 lb./ac. of P_2O_5 as Super+30 lb./ac. of K_2O as Pot. Sul., $M_2=M_1+50$ lb./ac. of Zn to soil+5 lb./ac. of Zn as spray, $M_3=M_1+50$ lb./ac. of Mn to soil+5 lb./ac. of Mn as spray, $M_4=M_1+20$ lb./ac. of Cu to soil+3 lb./ac. of Cu as spray, $M_5=M_1+100$ lb./ac. of Fe to soil+5 lb./ac. of Fe as spray, $M_6=M_1+100$ lb./ac. of Mg to soil+10 lb./ac. of Mg as spray, M_7=15 lb./ac. of Borax+3 lb./ac. of Borax as spray, M_8=2 lb./ac. of molybdate to soil+1 lb./ac. of molybdate as spray, $M_9=M_1$+All the micro-nutrients and M_{10}=All the micronutrients only.

3. DESIGN

(i) R.B.D. (ii) (a) 11. (b) N.A. (iii) 4. (iv) (a) 48.5'×9'. (b) 46.5'×7'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of grain. (iv) (a) 1952—N.A. (b) Yes. (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 2900 lb./ac. (ii) 401.6 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8	M_9	M_{10}
Av. yield	2082	3100	3018	3026	3140	3103	3118	3237	2917	3060	2099

S.E./mean = 200.8 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 59(118).**

Site :- Agri. Res. Instt., Pusa. **Type :- 'M'.**

Object :—To find out the effect of different G.M. crops on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Loamy. (b) N.A. (iii) 9.6.1959/2, 3.8.1959. (iv) (a) G.M. turned by mould board plough and two ploughings by *desi* plough. (b) Japanese method. (c) 6 srs./ac. (d) 10"×10". (e) 3. (v) 40 lb./ac. of N as A/S and 40 lb./ac. of P_2O_5 as Super. (vi) 498—2A (late). (vii) Irrigated. (viii) One weeding and one interculturing. (ix) 21.75". (x) 21 to 25.12.1959.

2. TREATMENTS :

5 G.M. crops preceding paddy : G_0=allow (control), G_1=*Dhaincha*, G_2=*Kalai*, G_3=*Moong* and G_4=*Sanai* G.M. applied in *situ*.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) 35'×24'. (b) 33'×22'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of grain and straw. (iv) (a) 1959—N.A. (b) No. (c Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1592 lb./ac. (ii) 475.8 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	G_0	G_1	G_2	G_3	G_4
Av. yield	1106	2481	1478	1302	1595

S.E./mean = 212.8 lb./ac.

Crop :- Paddy. **Ref :- Bh. 55(58).**

Site :- Distt. Agri. Farm, Putida. **Type :- 'M'.**

Object : - To test the effect of potash on paddy yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Khesari.* (c) Nil. (ii) (a) Clayey. (b) N.A. (iii) 17.6.1955/5.9.1955. (iv) (a) 5 ploughings by *desi* plough. (b) Japanese method. (c) 20 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) Nil. (vi) BK—88 (medium *Aman*). (vii) Unirrigated. (viii) One weeding and hoeing. (ix) 33.02″. (x) 10.12.1955.

2. TREATMENTS :

5 manurial treatments : M_0=Control (no manure), M_1=40 lb./ac. of N as A/S, $M_2=M_1+40$ lb./ac. of P_2O_5 as Super, $M_3=M_1+40$ lb./ac. of K_2O as Mur. Pot. and $M_4=M_3+40$ lb./ac. of P_2O_5 as Super.

Manures were applied at the time of puddling by mixing with soil and broadcasting.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 77′×14′. (b) 75′×12′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Attack by paddy jassid *Nephotettix Bipunctatus* FABR.—spraying done. (iii) Date of flowering, no. of tillers, and their height, measurement of earheads, yield of grain and straw. (iv) (a) 1955—contd. (b) No. (c) Nil. (v) (a) All the govt. agricultural farms. (b) N.A. (vi) Nil. (vi) Late transplanting due to failure of rain affected the yield.

5. RESULTS :

(i) 1168 lb /ac. (ii) 249.6 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	865	1145	1466	787	1579

S.E./mean = 124.8 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 56(171).**

Site :- Distt. Agri. Farm, Putida. **Type :- 'M'.**

Object :—To test the effect of potash on Paddy yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Gram. (c) Nil. (ii) (a) Clayey loam. (b) N.A. (iii) N.A./27.7.1956. (iv) 5 ploughings. (b) Japanese method. (c) 8 srs./ac. (d) 10″×10″. (e) 3 to 4. (v) Nil. (vi) BK—115. (vii) Unirrigated. (viii) 1 hoeing. (ix) 29.44″. (x) 23.11.1956.

2. TREATMENTS and 3. DESIGN :

Same as in expt. 55(58) above.

4. GENERAL :

(i) Good. (ii) Slight attack of paddy jassid. (iii) Grain and straw yield. (iv) to (vii) Same as in expt. no. 55(58) above.

5. RESULTS :

(i) 2077 lb./ac. (ii) 219.3 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	1369	1761	2626	1929	2702

S.E./mean = 109.7 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 57(138).**

Site :- Distt. Agri. Farm, Putida. **Type :- 'M'.**

Object :—To test the effect of potash on Paddy yield.

1. BASAL CONDITIONS :

(i) Nil. (b) *Khesari*. (c) Nil. (ii) (a) Clayey loam. (b) N.A. (iii) N.A./10.8.1957. (iv) (a) 5 ploughings. (b) Japanese method. (c) 8 srs./ac. (d) 10″1×0″. (e) 3 to 4. (v) Nil. (vi) BK—88. (vii) Unirrigated. (viii) Nil. (ix) 26.45″. (x) 25.11.1957.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 55(58) on page 63.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) to (vii) Same as in expt. no. 55(58) on page 63.

5. RESULTS :

(i) 1358 lb./ac. (ii) 400.0 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	1136	1269	1148	1472	1764

S.E./mean = 200.0 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 58(137).**

Site :- Distt. Agri. Farm, Putida. **Type :- 'M'.**

Object :—To test the effect of potash on Paddy yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Clayey loam. (b) N.A. (iii) N.A./24.7.1958. (iv) (a) 5 ploughings. (b) Japanese method. (c) 8 srs./ac. (d) 10″×10″. (e) 3 to 4. (v) Nil. (vi) BK—88. (vii) Unirrigated. (viii) N.A. (ix) 12.87″. (v) 19.11.1958.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 55(58) on page 63.

4. GENERAL :

Same as in expt. no. 57(138) above.

5. RESULTS :

(i) 2022 lb./ac. (ii) 412.6 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	1512	1671	2520	1730	2676

S.E./mean = 206.3 lb./ac.

Crop :- Paddy *(Kharif)***.** **Ref :- Bh. 59(78).**

Site :- Distt. Agri. Farm, Putida. **Type :- 'M'.**

Object :—To test the effect of potash on Paddy yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Clayey loam. (b) N.A. (iii) N.A./20.7.1959. (iv) (a) 5 ploughings. (b) Japanese method. (c) 8 srs./ac. (d) 10″×10″. (e) 3 to 4. (v) Nil. (vi) BK—88. (vii) Unirrigated. (viii) N.A. (ix) 38.92″. (x) 12.12.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 55(58) on page 63.

4. GENERAL :

Same as in expt. no. 57(138) on page 64.

5. RESULTS :

(i) 2389 lb./ac. (ii) 534.1 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	1727	2337	2377	2697	2809

S.E./mean = 267.1 lb./ac.

Crop :- Paddy *(Kharif)***.** **Ref :- Bh. 59(61).**

Site :- Distt. Agri. Farm, Putida. **Type :- 'M'.**

Object :—To study the effect of potash on Paddy yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Clayey loam. (b) N.A. (iii) N.A./23.8.1959. (iv) (a) 4 ploughings. (b) Japanese method. (c) 7 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) Nil. (vi) BK—88. (vii) Unirrigated (viii) 2 weedings and hoeings. (ix) 27.56″. (x) N.A.

2. TREATMENTS :

5 manurial treatments : M_0=Control (no manure), M_1=80 lb./ac. of N as A/S, $M_2=M_1+80$ lb./ac. of P_2O_5 as Super, $M_3=M_1+80$ lb./ac. of K_2O as Mur. Pot. and $M_4=M_3+80$ lb./ac. of P_2O_5 as Super.

N to be applied half at the time of puddling and half 3 weeks after planting. Super and Mur. Pot. to be applied full dose at puddling.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 59′×18′. (b) 57′×16′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Some of the plots were affected by cater-piller. (iii) Grain and straw yield. (iv) (a) 1959—N.A. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1238 lb./ac. (ii) 618.8 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	997	969	1767	731	1724

S.E./mean = 309.4 lb./ac.

Crop :- Paddy *(Kharif)***.** **Ref :- Bh. 58(139).**

Site :- Distt. Agri. Farm, Putida. **Type :- 'M'.**

Object :—To find out a suitable manurial dose for *Gora* Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Clayey loam. (b) N.A. (iii) N.A./12.7.1958. (iv) (a) 4 ploughings. (b) Behind the plough. (c) 30 srs./ac. (d) Between rows 1′. (e) N.A. (v) Nil. (vi) 49—19 *Gora* Paddy (early). (vii) Unirrigated. (viii) N.A. (ix) 23.71″. (x) 14.10.1958.

2. TREATMENTS :

All combinations of (1), (2) and (3)
(1) 3 levels of N as A/S : N_0=0, N_1=20 and N_2=40 lb./ac.
(2) 3 levels of P_2O_5 as Super : P_0=0, P_1=20 and P_2=40 lb./ac.
(3) 3 levels of K_2O as Mur. Pot. : K_0=0, K_1=20 and K_2=40 lb./ac.

3. DESIGN :

(i) 3^3 partially confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) N.A. (iii) 2. (iv) (a) 18′×16′. (b) 16′×14′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1958—contd. (b) No. (c) Nil. (v) (a) Kanke. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 613 lb./ac. (ii) 285.1 lb./ac. (iii) Main effect of N alone is highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	487	500	375	475	504	383	454
N_1	566	729	554	575	637	636	616
N_2	745	583	979	573	875	859	769
Mean	599	604	636	541	672	626	613
K_0	691	541	391				
K_1	600	696	720				
K_2	506	575	797				

S.E. of any marginal mean = 67.2 lb./ac.
S.E. of body of any table = 116.4 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 59(80).**
Site :- Distt. Agri. Farm, Putida. **Type :- 'M'.**

Object :—To find out a suitable manurial dose for Gora Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Gram. (c) N.A. (ii) (a) Clayey loam. (b) N.A. (iii) 26.6.1959. (iv) (a) 4 ploughings. (b) Behind the plough. (c) 30 srs./ac. (d) Between rows 1′. (e) —. (v) Nil. (vi) 49—19 *Gora* Paddy (early). (vii) Unirrigated. (viii) N.A. (ix) 26.53″. (x) 13.10.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 58(139) on page 65.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1958—contd. (b) No. (c) Nil. (v) (a) Kanke. (b) N.A. (vi) Some plots were washed away on account of heavy rains. (vii) Nil.

5. RESULTS :

(i) 674 lb./ac. (ii) 311.8 lb./ac. (iii) Only main effect of N is significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	512	479	533	492	558	474	508
N_1	825	862	563	825	779	646	750
N_2	604	604	1087	658	721	916	765
Mean	647	648	728	658	686	679	674
K_0	745	741	488				
K_1	621	691	746				
K_2	575	512	950				

S.E. of any marginal mean = 73.5 lb./ac.
S.E. of body of any table = 127.3 lb./ac.

Crop :- Paddy. **Ref :- Bh. 55(57).**

Site :- Distt. Agri. Farm, Putida. **Type :- 'M'.**

Object :—To test the effect of lime on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Gram. (c) Nil. (ii) (a) Gravelly soil. (b) N.A. (iii) 17.6.1955/8.8.1955. (iv) (a) 5 ploughings by *desi* plough. (b) Japanese method. (c) 20 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) Nil. (vi) CH—10 (*Aus* medium). (vii) Unirrigated. (viii) One hoeing and weeding. (iv) 27.05″. (x) 10.10.1955.

2. TREATMENTS :

6 manurial treatments : M_0=Control, M_1=40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super+40 lb./ac. of K_2O as Mur. Pot., M_2=800 lb./ac. of lime, M_3=1600 lb./ac. of lime, M_4=2400 lb./ac. of lime and $M_5=M_1+M_4$.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 5. (iv) (a) 70′×9′. (b) 68′×7′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Poor due to early sowing and late transplanting. (ii) Attack by paddy jassid (*Nephotettix Bipunctatus* F.A.B.R)—control measures not taken. (ii) Biometric observations and yield of grain and straw. (iv) (a) 1955—1956. (b) Yes. (c) Nil. (v) (a) Dumka, Kanke, Hathwara and Netarhat. (b) N.A. (vi) and (vii) Nil

5. RESULTS :

(i) 406 lb./ac. (ii) 292.0 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	252	527	295	462	449	451

S.E./mean = 130.6 lb./ac.

Crop :- Paddy (*Kharif*). **Ref :- Bh. 56(170).**

Site :- Distt. Agri. Farm, Putida. **Type :- 'M'.**

Object :—To test the effect of lime on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Gram. (c) Nil. (ii)(a) Clayey loam. (b) N.A. (iii) N.A./12 to 14.7.1956. (iv) (a) 5 ploughings, earth breaking by cultivator. (b) Japanese method. (c) 8 srs./ac. (d) 10″×10″. (e) N.A. (v) Nil. (vi) CH—10. (vii) Unirrigated. (viii) N.A. (ix) 43.07″. (x) 28.9.1956.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 55 (57) on page 67.

4. GENERAL :

(i) Good. (ii) Attack of jassid. (iii) to (vii) Same as in expt. no. 55 (57) on page 67.

5. RESULTS :

(i) 1948 lb./ac. (ii) 605.6 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	1861	2968	1445	1428	1776	2209

S.E./mean = 270.8 lb./ac.

Crop :- Paddy (*Kharif*). **Ref :- Bh. 57(129).**

Site :- Distt. Agri. Farm, Putida. **Type :- 'M'.**

Object :—To study the effect of growing G.M. crops and applying them as manures to the succeeding Paddy crop.

1. BASAL CONDITIONS :

(i) (a) and (b) As per treatments. (c) 20 lb./ac. of P_2O_5 as Super. (ii) (a) Clayey loam. (b) N.A. (iii) 5.7.1957/1.9.1957. (iv) (a) 2½ ploughings after burying of G.M. crops. (b) Japanese method. (c) 8 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) Nil. (vi) BK—88. (vii) Unirrigated. (viii) Nil. (ix) 22.97″. (ix) 10.12.1957.

2. TREATMENTS :

4 G.M. crops preceding Paddy : G_0=Fallow (control), G_1=*Dhaincha*, G_2=*Kalai* and G_3=*Moong*.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) 41′×14′. (b) 39′×12′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1957—1959. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 450 lb./ac. (ii) 31.4 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	G_0	G_1	G_2	G_3
Av. yield	395	502	451	451

S.E./mean = 15.7 lb./ac.

Crop :- Paddy (*Kharif*). **Ref :- Bh. 58(119).**

Site :- Distt. Agri. Farm, Putida. **Type :- 'M'.**

Object :—To study the effect of growing G.M. crops and applying them as manures to the succeeding Paddy crop.

1. BASAL CONDITIONS:

(i) (a) G.M.—Paddy. (b) As per treatments. (c) 20 lb./ac. of P_2O_5 as Super. (ii) (a) Clayey loam. (b) N.A. (iii) N.A./21.8.1958. (iv) (a) 2 ploughings after burying the G.M. crops. (b) Japanese method. (c) 8 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) Nil. (vi) 498—2A. (vii) Unirrigated. (viii) 1 weeding and 8 hoeing. (ix) 13.86″. (x) 15.12.1958.

2. TREATMENTS :

5 G.M. crops preceding Paddy : G_0=Fallow (control), G_1=*Dhaincha*, G_2=*Kalai*, G_3=*Moong* and G_4=*Sanai*

3. DESIGN:

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 72′×14′. (b) 70′×12′. (v) 1′ alround the plot. (vi) Yes.

4. GENERAL:

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1957—1959. (b) No. (c) Nil. (v) (a) Hazaribagh. (b) N.A. (vi) Nil. (vii) Expt. was modified in 1958.

5. RESULTS:

(i) 1275 lb./ac. (ii) 171.0 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	G_0	G_1	G_2	G_3	G_4
Av. yield	1267	1223	1360	1293	1233

S.E./mean = 85.5 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 59 (56).**

Site :- Distt. Agri. Farm, Putida. **Type :- 'M'.**

Object :—To study the effect of growing G.M. crops and applying them as manures to the succeeding Paddy crop.

1. BASAL CONDITIONS :

(i) (a) and (b) As per treatments. (c) 20 lb./ac. of P_2O_5 as Super. (ii) (a) Clayey loam. (b) N.A. (iii) N.A./9.8.1959. (iv) (a) 2 ploughings after burying G.M. crops. (b) Japanese method. (c) 8 srs./ac. (d) –0″×10″. (e) 2 to 3. (v) Nil. (vi) 498—2A. (vii) Unirrigated. (viii) Nil. (ix) 31.85″. (x) 6.1.1960.

2. TREATMENTS :

Same as in expt. no. 58(119) on page 68.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 54′×18′. (b) 52′×16′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Good. All the G.M. crops lodged. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1957—1959. (b) No. (c) Nil. (v) (a) Baliapur. (b) N.A. (vi) Nil. (vii) Expt. was modified in 1958.

5. RESULTS :

(i) 1763 lb./ac. (ii) 457.5 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	G_0	G_1	G_2	G_3	G_4
Av. yield	1609	1676	1734	2016	1781

S.B./mean = 228.8 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 58(122).**

Site :- Distt. Agri. Farm, Putida. **Type :- 'M'.**

Object :—To study the effect of trace elements as soil application with and without lime on the yield of Paddy.

1. BASAL CONDITIONS

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Clayey loam. (b) N.A. (iii) N.A./14.8.1958. (iv) (a) 4 ploughings (b) Japanese method. (c) 8 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) 20 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super at planting and 20 lb./ac. of N 3 weeks after planting. (vi) BK—88. (vii) Unirrigated. (viii) Hoeing with Japanese puddlers and 1 weeding. (ix) 26.85″. (x) 30.11.1958.

2. TREATMENTS :

Main-plot treatments :

2 doses of lime : L_0=No lime and L_1=2400 lb./ac. of lime.

Sub-plot treatments :

13 manurial treatments : M_0=Control, M_1=5 lb./ac. of B as Borax, M_2=10 lb./ac. of B as Borax, M_3=20 lb./ac. of Mn as $MnSo_4$, M_4=20 lb./ac. of Mn as $MnSO_4$, M_5=5 lb./ac. of Zn as $ZnSo_4$, M_6=10 lb./ac. of Zn as $ZnSo_4$, M_7=5 lb./ac. of Cu as C/S, M_8=10 lb./ac. of Cu as C/S, M_9=1 lb./ac. of Mo as Sodium Molybdate, M_{10}=2 lb./ac. of Mo as Sodium Molybdate, M_{11}=20 lb./ac. of Fe as $FeSO_4$ and M_{12}=40 lb./ac. of Fe as $FeSO_4$.

Lime applied on 19.7.1958 and trace elements on 14.8.1958.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication ; 13 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 14′×10′. (b) 12′×8′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1958—1960. (b) Yes. (c) Nil. (v) (a) Kanke, Baliapur and Hazaribagh. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1910 lb./ac. (ii) (a) 706.0 lb./ac. (b) 292.9 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8	M_9	M_{10}	M_{11}	M_{12}	Mean
L_0	2053	1804	2097	1751	1946	2026	1955	2151	1751	1768	2044	1929	2079	1956
L_1	1777	1831	1777	1822	1733	2151	2240	1555	2124	1804	1804	1955	1733	1870
Mean	1915	1818	1937	1787	1840	2089	2098	1853	1938	1786	1924	1942	1906	1910

S.E of difference of two

1. L marginal means = 138.5 lb./ac.
2. M marginal means = 196.5 lb./ac.
3. M means at the same level of L = 207.1 lb./ac.
4. L means at the same level of M = 242.4 lb./ac.

Crop :- Paddy *(Kharif)* **Ref :- Bh. 59(63).**

Site :- Distt. Agri. Farm, Putida. **Type :- 'M'.**

Object :—To study the effect of trace elements as soil application with and without lime on the yield of Paddy.

1. BASAL CONDITIONS:

(i) (a) Nil. (b) Paddy. (c) 40 lb./ac. of N as A/S+40 lb./ac. of P as Super +as per treatments. (ii) (a) Clayey loam. (b) N.A. (iii) N.A./26.7.1959. (iv) (a)4 ploughings. (b) Japanese method. (c) 8 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) 20 lb./ac. of N as A/S+40 lb./ac. of P as Super at planting and 20 lb./ac. of N as A/S 3 weeks after planting. (vi) BK—88. (vii) Unirrigated. (viii) 1 hoeing. (ix) 35.23″. (x) 21.11.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 58(122) on page 69.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1958—1960. (b) Yes. (c) Nil. (v) (a) Kanke, Baliapur and Hazaribagh. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2506 lb./ac. (ii) (a) 427.2 lb./ac. (b) 411.4 lb./ac. (iii) Only M effect is highly significant. (iv) Av. yield of grain in lb./ac.

	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8	M_9	M_{10}	M_{11}	M_{12}	Mean
L_0	1342	2538	2421	2468	2752	2683	2351	2392	2158	2672	2450	2538	2439	2400
L_1	1954	2645	2421	2264	2567	2830	3138	3062	2672	2380	2468	2613	2917	2611
Mean	1648	2596	2421	2366	2660	2757	2745	2727	2415	2526	2459	2576	2678	2506

S.E. of difference of two

1. L marginal means = 83.8 lb./ac.
2. M marginal means = 205.7 lb./ac.
3. M means at the same level of L = 290.9 lb./ac.
4. L means at the same level of M = 291.8 lb./ac.

Crop :- Paddy *(Kharif).* **Ref :- Bh. 58(157).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To find out the effect of growing G.M. crops and applying them as manures to the succeeding Paddy crop.

1. BASAL CONDITIONS :

(i) (a) and (b) As per treatments. (c) Nil. (ii) (a) and (b) N.A. (iii) N.A./9, 10.8.1958. (iv) (a) 4 ploughings. (b) Japanese method. (c) 8 srs./ac. (d) 10″×10″. (e) N.A. (v) Nil. (vi) 498—2A. (vii) Irrigated. (viii) 1 weeding and 2 hoeings. (ix) 26.82″. (x) 22.12.1958.

2. TREATMENTS :

5 G.M. crops preceding Paddy : G_0=Fallow (control), G_1=*Dhaincha*, G_2=*Kalai*, G_3=*Moong* and G_4=*Sanai*

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) N.A. (b) 31′×20′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1958—contd. (b) N.A. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2419 lb./ac. (ii) 689 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	G_0	G_1	G_2	G_3	G_4
Av. yield	2502	2753	2487	2166	2186

S.E./mean = 308.1 lb./ac.

Crop :- Paddy *(Kharif).* **Ref :- Bh. 59(89).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To find out the effect of growing G.M. crops and applying to the succeeding Paddy crop.

1. BASAL CONDITIONS :

(i) (a) and (b) As per treatments. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 12, 13.7.1959/12, 13.8.1959. (iv) (a) 4 ploughings. (b) Japanese method. (c) 8 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) Nil. (vi) N.A. (vii) Unirrigated. (viii) 1 weeding. (ix) 35.5″. (x) 9, 10.12.1959.

2. TREATMENTS :

Same as in expt. no. 58 (157) on page 71.
The G.M. crops were sown on 15.6.1959 and buried on 2.8.1959.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) 32′×22′. (b) 30′×20′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1958—N.A. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1938 lb./ac. (ii) 253.4 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	G_0	G_1	G_2	G_3	G_4
Av. yield	1788	2085	1882	1975	1962

S.E./mean = 113.3 lb./ac.

Crop :- Paddy ***(Kharif).*** **Ref :- Bh. 57(210).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To test the effect of algae inoculation on Paddy yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) N.A. (iv) (a) 3 ploughings before transplanting. (b) Japanese method. (c) 7 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) Nil. (vi) BR—34. (vii) Irrigated. (viii) Weeding by *khurpi*. (ix) 0.06″. (x) N.A.

2. TREATMENTS :

T_1=Control (no manure), T_2=G.M. with *Sanai*, T_3=40 lb./ac. of P_2O_5 as Super, T_4=Algae at transplanting, $T_5=T_3$+Algae at transplanting, $T_6=T_3$+Algae 20 days before transplanting $T_7=T_2+T_3$ and T_8=Algae 20 days before transplanting.
Algae inoculated at different times as per treatments.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 2. (iv) (a) 14′×11′. (b) 12′×9′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Grain and straw yield. (iv) (a) to (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 872 lb./ac. (ii) 234.1 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8
Av. yield	804	817	1089	1011	923	545	1192	597

S.E./mean = 165.5 lb./ac.

Crop :- Paddy ***(Kharif).*** **Ref :- Bh. 58(238).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To test the effect of inoculation with Tolyphixtenius, a nitrogen fixing algae on the yield of Paddy.

1. BASAL CONDITIONS:

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 26 to 29.8.1958. (iv) (a) 3 ploughings by *desi* plough. (b) Japanese method. (c) 10 srs./ac. (d) 1′×1′. (e) 2 to 3. (v) Nil. (vi) 498—2A. (vii) Irrigated. (viii) One weeding and hoeing. (ix) 28.50″. (x) 9.12.1958.

2. TREATMENTS:

8 manurial treatments : M_0=Control, M_1=40 lb./ac. of P_2O_5 as Super, M_2=Algae inoculation with liquid culture, $M_3=M_2+40$ lb./ac. of P_2O_5 as Super, M_4=Algae inoculation with dry culture, $M_5=M_4+40$ lb./ac. of P_2O_5 as Super, M_6=20 lb./ac. of N as A/S, $M_7=M_6+40$ lb./ac. of P_2O_5 as Super, M_8=40 lb./ac. of N as A/S and $M_9=M_8+40$ lb./ac. of P_2O_5 as Super.

3. DESIGN :

(i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 4. (iv) (a) 31′×13′. (b) 29′×11′. (v) 1′ alround the plot. (vi) Yes.

4. GENERAL :

(i) Fair (ii) Nil. (iii) Grain yield and straw weight. (iv) (a) to (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 1168 lb./ac. (ii) 362.8 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8	M_9
Av. yield	1031	942	1052	1279	1027	1116	1451	1465	1239	1082

S.E./mean = 181.4 lb./ac.

Crop :. Paddy ***(Kharif).*** **Ref :- Bh. 59(155).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To test the effect of inoculation with Tolyphixtenius, a nitrogen fixing algae on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Wheat. (c) N.A. (ii) Sandy loam. (b) N.A. (iii) N.A./20.8.1959. (iv) (a) 3 ploughings by *desi* plough. (b) Japanese method. (c) 10 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) N.A. (vi) 498—2A (late). (vii) Irrigated. (viii) N.A. (ix) 28.75″. (x) 28.12.1959.

2. TREATMENTS :

8 manurial treatments : M_0=Control, M_1=40 lb./ac. of P_2O_5 as Super, M_2=Algae inoculation 20 days before transplanting, $M_3=M_2+40$ lb./ac. of Super, M_4=G.M. with *dhaincha* at 400 lb./ac., $M_5=M_4+40$ lb./ac. of P_2O_5 as Super, M_6=Algae inoculation at the time of transplanting and $M_7=M_6+40$ lb./ac. of P_2O_5 as Super.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 31′×13′. (b) 29′×11′. (v) 1′×1′. (vi) Yes.

4. GENERAL:

(i) Fair. (ii) Nil. (iii) Grain and straw. (iv) (a) to (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 3108 lb./ac. (ii) 502.7 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7
Av. yield	2852	2619	3189	3086	3318	3215	3397	3189

S.E./mean = 251.35 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 58(237).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To compare the effects of A/S and C/N on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Sandy loam. (b) N.A. (iii) N.A./2 to 8.9.1958. (iv) (a) 2 ploughings and 2 cross ploughings by *desi* plough. (b) Japanese method (c) 7 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) Nil. (vi) BK—36. (vii) Irrigated. (viii) 2 spadings. (ix) 25.25″. (x) 24.12.1958 .

2. TREATMENTS :

All combinations of (1) and (2)+a control

(1) 2 sources of N : S_1=A/S and S_2=C/N.

(2) 4 manurial treatments : M_1=25 lb./ac. of N, M_2=50 lb./ac. of N, M_3=50 lb./ac. of N+40 lb./ac. of P_2O_5 as Super and M_4=M_3+40 lb./ac. of K_2O as Mur. Pot.

3. DESIGN:

(i) R.B D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 41½′×28½′. (b) 39′×27′11″. (v) N.A. (vi) Yes.

4. GENERAL:

(i) Fair. (ii) Nil. (iii) Grain and straw yield. (iv) (a) to (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 961 lb./ac. (ii) 312.7 lb./ac. (iii) No effect is significant. (iv) Av. yield of grain in lb./ac.

Control=1090 lb./ac.

	M_1	M_2	M_3	M_4	Mean
S_1	809	1037	987	917	937
S_2	877	957	1005	996	959
Mean	843	997	996	956	948

S.E. of M marginal mean = 110.5 lb./ac.

S.E. of S marginal mean = 78.2 lb./ac.

S.E. of body of table = 156.3 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 59(147).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To study the effect of potash on the yield of Paddy.

1. BASAL CONDITIONS:

(i) (a) Paddy—Paddy. (b) Paddy. (c) As per treatments. (ii) (a) Sandyl oam. (b) N.A. (iii) N.A./31.7.1959. (iv) (a) 3 ploughings by *desi* plough. (b) Japanese method. (c) 7 srs./ac. (d) 1′×1′. (e) 2 to 3. (v) Nil. (vi) 498—2A. (vii) Irrigated. (viii) One weeding and hoeing. (ix) 28.60″. (x) 20.12.1959.

2. TREATMENTS :

5 manurial treatments : M_0=Control, M_1=80 lb./ac. of N as A/S, M_2=M_1+80 lb./ac. of P_2O_5 as Super, M_3=M_1+40 lb./ac. of K_2O as Mur. Pot. and M_4=M_3+40 lb./ac. of P_2O_5 as Super.

3. DESIGN:

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) 35′×26′. (b) 34′×25′. (v) 6″×6″. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Endrine was sprayed twice. (iii) Grain and straw yield. (iv) (a) N.A. (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1178 lb./ac. (ii) 130.8 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	751	1344	1331	1265	1199

S.E./mean = 58.5 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 59(146).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To find out the relative effects of different kinds of nitrogenous fertilizers on Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Sandy loam. (b) N.A. (iii) N.A./3.8:1959. (iv) (a) 3 ploughings by *desi* plough. (b) Japanese method. (c) 7 srs./ac. (d) 1′×1′. (e) 2 to 3. (v) Nil. (vi) 498—2 A. (vii) Irrigated. (viii) One weeding and hoeing. (ix) 28·60″. (x) 19.12.1959.

2. TREATMENTS :

All combinations of (1) and (2)+two extra treatments

(1) 6 sources of N : S_1=A/S, S_2=Urea (applied at the time of sowing), S_3=A/S/N, S_4=C/A/N, S_5=A/C and S_6=Urea (applied 15 days before sowing).

(2) 2 levels of N : N_1=25 and N_2=50 lb./ac.

30 lb./ac. of P_2O_5 as Super+30 lb./ac. of K_2O as Mur. Pot. given to all plots.

Extra treatments : T_0=Control and T_1=30 lb./ac. of P_2O_5 as Super+30 lb./ac. of K_2O as Mur. Pot.

3. DESIGN :

(i) R.B.D. (ii) (a) 14. (b) N.A. (iii) 3. (iv) (a) 19′×24′. (b) 18′×23′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. Endrine was sprayed twice. (iii) Grain and straw yield. (iv) (a) N.A. (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1206 lb./ac. (ii) 379.31 lb./ac. (iii) 'Only T_1 *vs* others' is significant. (iv) Av. yield of grain in lb./ac.

T_0 = 433 and T_1 = 1443 lb./ac.

	S_1	S_2	S_3	S_4	S_5	S_6	Mean
N_1	1118	1262	1298	1551	1262	1443	1322
N_2	1695	829	1407	1191	1227	722	1179
Mean	1407	1046	1353	1371	1245	1082	1251

S.E. of S marginal mean = 154.8 lb./ac.
S.E. of N marginal mean = 89.4 lb./ac.
S.E. of body of table = 219.0 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 59(151).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To study the effect of potash on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Sandy loam. (b) N.A. (iii) N.A./7.8.1959. (iv) (a) 3 ploughings by *desi* plough. (b) Japanese method. (c) 7 srs./ac. (d) 1′×1′. (c) 2 to 3. (v) Nil. (vi) 498—2A. (vii) Irrigated. (vii) One weeding and hoeing. (ix) 25.50″. (x) 17.12.1959.

2. TREATMENTS :

5 manurial treatments : M_0=Control, M_1=40 lb./ac. of N as A/S, M_2=M_1+40 lb./ac. of P_2O_5 as Super, M_3=M_1+40 lb./ac. of K_2O as Mur. Pot. and M_4=M_3+40 lb./ac. of P_2O_5 as Super.

3. DESIGN:

(i) R.B.D. (ii) (a) 5 (b) N.A. (iii) 4. (iv) 32′×26′. (b) 30′×24′. (v) 1′×1′. (vi) Yes.

4. GENERAL:

(i) Fair. (ii) Attack of stem-borer—Endrine was sprayed twice. (iii) Grain yield. (iv) (a) N.A. (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2021 lb. /ac. (ii) 329.0 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	1636	2129	2052	2114	2175

S.E./mean = 164.5 lb./ac.

Crop :- Paddy. **Ref :- Bh. 54(43).**

Site :- Argi. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To find out the optimum dose of N, P and K for Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Dhaincha*. (c) 20 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy loam. (b) N.A. (iii) 26.6.1954/ 28.7.1954. (iv) (a) Burying *dhaincha* with Punjab plough ; ploughing with *desi* plough. (b) Japanese method. (c) 7 to 10 srs./ac. (d) 12″×12″. (e) 2 to 3. (v) 400 mds./ac. of F.Y.M. and G.M. with *dhaincha* at 2127 lb./ac. before transplanting. (vi) BK—36 (late). (vii) Irrigated. (viii) 1 weeding. (ix) 41.69″ (x) 18.12.1954.

2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 3 levels of N as A/S : N_0=0, N_1=40 and N_2=80 lb./ac.
(2) 3 levels of P_2O_5 as Super : P_0=0, P_1=40 and P_2=80 lb./ac.
(3) 3 levels of K_2O as Mur. Pot. : K_0=0 K_1=40 and K_2=80 lb./ac.

3. DESIGN :

(i) 3^3 confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) N.A. (iii) 2. (iv) (a) 43′10″×6′. (b) 41′10″×4′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Normal ; no lodging. (ii) Nil. (iii) Weight of grain and straw. (iv) (a) 1954—contd. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2240 lb./ac. (ii) 347.60 lb./ac. (iii) Main effect of N is highly significant and interaction P×K is significant. Others are not significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	Mean	K_0	K_1	K_2
N_0	2275	2384	2598	2419	2359	2487	2411
N_1	2563	2530	2413	2502	2297	2706	2503
N_2	1890	1871	1632	1798	1841	1882	1670
Mean	2243	2262	2215	2240	2166	2358	2195
K_0	2299	1784	2413				
K_1	2224	2622	2229				
K_2	2205	2378	2001				

S.E. of any marginal mean = 81.9 lb./ac.
S.E. of body of any table = 141.9 lb./ac.

Crop :- Paddy. **Ref :- Bh. 55(74).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :— To find out the optimum dose of N, P and K for Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Dhaincha.* (c) 20 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy loam. (b) N.A. (iii) 19.6.1955/ 5.8.1955. (iv) (a) *Dhaincha* buried by Punjab plough, ploughing with country plough. (b) Japanese method. (c) 7 to 10 srs./ac. (d) 1′×1′. (e) 2 to 3. (v) G.M. with *dhaincha* at 2252.8 lb./ac. (vi) BK—36 (late). (vii) Irrigated. (viii) 2 or 3 weedings. (iv) 32.36″. (x) 10.12.1955.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(43) on page 76.

4. GENERAL:

(i) Normal. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1954—contd. (b) No. (c) Nil. (iv) (a) Bikramganj, Patna, Kanke and Dumka. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2918 lb./ac. (ii) 405.6 lb./ac. (iii) Only N effect is significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	Mean	K_0	K_1	K_2
N_0	3080	3102	3181	3121	3048	3189	3127
N_1	2343	3010	2809	2721	2693	2796	2674
N_2	2956	2714	3067	2912	3007	2888	2842
Mean	2793	2942	3019	2918	2916	2958	2882
K_0	2687	2744	3316				
K_1	2929	2918	3026				
K_2	2763	3164	2714				

S.E. of any marginal mean = 95.6 lb./ac.
S.E. of body of any table = 165.6 lb./ac.

Crop :- Paddy ***(Kharif).*** **Ref :- Bh. 56(74).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To find out the optimum dose of N, P and K for Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Dhaincha.* (c) Nil. (ii) (a) Clayey loam. (b) N.A. (iii) 13.6.1956/24.7.1956. (iv) (a) 2 ploughings followed by beaming. (b) Japanese method. (c) 7 to 10 srs./ac. (d) 1′×1′. (e) 2 to 3. (v) *Dhaincha* buried 3 weeks before transplanting. (vi) BK—36 (late). (vii) Irrigated. (viii) 3 hoeings and weedings. (ix) 54.00″. (x) 6 to 8.12.1956.

2. TREATMENTS and 3. DESIGN :

Same as expt. no. 54(43) on page 76.

4. GENERAL:

(i) Good : crop lodged in some plots. (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1954—1958. (b) No. (c) Nil. (v) Patna, Pusa, Kanke and Bikramganj. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3311 lb./ac. (ii) 314.1 lb./ac. (iii) Only the main effect of N is highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	Mean	K_0	K_1	K_2
N_0	3183	3151	3053	3129	3219	2886	3284
N_1	3200	3189	3143	3177	3286	3290	2955
N_2	3684	3736	3460	3627	3652	3601	3623
Mean	3356	3359	3219	3311	3386	3259	3287
K_0	3560	3257	3341				
K_1	3065	3520	3192				
K_2	3438	3299	3124				

S.E. of any marginal mean = 74.0 lb./ac.
S.E. of body of any table = 128.2 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 57(30).**
Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To find out the optimum dose of N, P and K for Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Dhaincha*. (c) Nil. (ii) (a) Clayey loam. (b) N.A. (iii) 18.6.1957/12.8.1957. (iv) (a) 4 ploughings followed by beaming. (b) Japanese method. (c) 7 to 10 srs./ac. (d) 1′×1′. (e) 2 to 3. (v) *Dhaincha* burried before transplanting. (vi) BK—36 (late). (vii) Irrigated. (viii) Hoeing and weeding thrice. (ix) 23.60″. (x) 12.12.1957.

2. TREATMENTS :

Same as in expt. no. 54(43) on page 76.

3. DESIGN :

(i) 3^3 partially confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) 31′8″×87′. (iii) 2. (iv) (a) 31′8″×8′4″. (b) 30′×6′8″. (v) One row alround the net plot. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Germination and flowering ; grain and straw yield. (iv) (a) 1954—1958. (b) No. (c) Nil. (v) (a) Patna, Kanke and Bikramganj. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1188 lb./ac. (ii) 221.33 lb./ac. (iii) None of the effects is the significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	Mean	K_0	K_1	K_2
N_0	1089	1113	1116	1106	1186	1042	1090
N_1	1098	1288	1152	1179	1204	1104	1229
N_2	1363	1295	1181	1280	1190	1305	1345
Mean	1183	1232	1150	1188	1193	1150	1221
K_0	1145	1300	1134				
K_1	1136	1204	1110				
K_2	1268	1192	1203				

S.E. of any marginal mean = 52.2 lb./ac.
S.E. of body of any table = 90.4 lb./ac.

Crop :- Paddy ***(Kharif).*** **Ref :- Bh. 58(8).**
Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To find out the optimum dose of N, P and K for Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Oats. (c) N.A. (ii) (a) Clay loam. (b) N.A. (iii) 15.6.1958/12, 13.8.1958. (iv) (a) Ploughing followed by beaming. (b) Line planting. (c) 7 to 10 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) Nil. (vi) 36—BK (late). (vii) Irrigated. (viii) 2 hoeings by Japanese hoe. (ix) 33.26″. (x) 18, 19.12.1958.

2. TREATMENTS :

Same as in expt. no. 54(43) on page 76.

3. DESIGN :

Same as in expt. no. 57(30) on page 78.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Straw and grain yield. (iv) (a) 1954—1958. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3145 lb./ac. (ii) 375.0 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	Mean	K_0	K_1	K_2
N_0	3025	3324	3398	3249	3254	3410	3082
N_1	2971	3036	3429	3145	3143	3209	3084
N_2	3125	2891	3104	3040	2855	3200	3066
Mean	3040	3084	3310	3145	3084	3273	3077
K_0	3084	2841	3327				
K_1	3272	3229	3317				
K_2	2764	3181	3286				

S.E. of any marginal mean = 88.4 lb./ac.
S.E. of body of any table = 153.1 lb./ac.

Crop :- Paddy. **Ref :- Bh. 55(77).**
Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To study the efficacy of minor elements in controlling tip-burn disease and improving the Paddy yield.

1. BASAL CONDITIONS:

(i) (a) Nil. (b) *Dhaincha*. (c) 20 lb./ac. of P_2O_5 during *dhaincha* sowing. (ii) (a) Sandy loam. (b) N.A. (iii) 19.6.1955/8.8.1955. (iv) (a) Ploughing by country plough. (b) N.A. (c) 20 to 30 srs./ac. (d) 1′×1′. (e) 2 to 3. (v) 40 lb./ac. of N as A/S, half at transplanting and half 3 weeks later. (vi) BK—36 (late). (vii) Irrigated. (viii) 1 weeding. (ix) 32.36″. (x) 19.12.1955.

2. TREATMENTS:

10 manurial treatments : M_0=Control (no manure), M_1=N as A/S, M_2=N as A/C, M_3=N as A/S+P_2O_5 as Super, M_4=N as A/S+P_2O_5 as Super+K_2O as Mur. Pot., M_5=M_3+Boron, M_6=M_3+$MnSO_4$, M_7=M_3+$ZnSO_4$, M_8=M_3+C/S and M_9=M_3+$FeCl_3$.

N, P_2O_5 and K_2O were applied at 40 lb./ac. Minor elements were applied at 20 lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 2. (iv) (a) 52′×12′. (b) 50′×10′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Tip-burn disease. (iii) Weight of grain and straw. (iv) (a) 1955—contd. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 2789 lb./ac. (ii) 459.7 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8	M_9
Av. yield	2554	3000	2603	2450	3093	2940	2831	2532	2880	3006

S.E./mean = 325.1 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 56(72).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To study the efficacy of minor elements in controlling tip-burn disease and improving the Paddy yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Dhaincha.* (c) Nil. (ii) (a) Clayey loam. (b) N.A. (iii) 13.6.1956/18.7.1956. (iv) (a) 3 ploughings followed by beaming. (b) Line planting. (c) 7 to 10 lb./ac. (d) 10″×10″. (e) 2 to 3. (v) *Dhaincha* buried before transplanting ; 40 lb./ac. of N as A/S was applied half before transplanting and other half 3 weeks later. (vi) BK—36 (late). (vii) Irrigated. (viii) 3 hoings and 3 weedings. (ix) 54.00″. (x) 11.12.1956.

2. TREATMENTS :

Same as in expt. no. 55(77) on page 79.

3. DESIGN :

(i) R.B.D. (ii) 10. (b) N.A. (iii) 2. (iv) (a) 54′×14′. (b) 52′×12′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Normal—lodged totally. (ii) Nil. (iii) Dates of germination and flowering, yield of grain and straw. (iv) (a) 1955—1956. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1955 lb./ac. (ii) 237.0 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8	M_9
Av. yield	2046	1889	2129	2118	1900	2024	1852	1959	1592	2037

S.E./mean = 167.6 lb./ac.

Crop :- Paddy. **Ref :- Bh. 54(45).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To study the effect of application of split doses and P_2O_5 and N on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 20.6.1954/5.8.1954. (iv) (a) N.A. (b) Japanese method. (c) 7 to 10 lb./ac. (d) 1′×1′. (e) 2 to 3. (v) Nil. (vi) 498—2 A (BR—8, late). (vii) Irrigated. (viii) 1 weeding. (ix) 41.69″. (x) 28,29.12.1954.

2. TREATMENTS :

6 manurial treatments : M_0=Control (no manure), $M_1=P_2O_5+N$ at puddling, $M_2=P_2O_5$ at puddling+N a week after transplanting, $M_3=P_2O_5$ at puddling+½ N a week after transplanting, +½ N 4 weeks after transplanting, $M_4=P_2O_5$ and N a week after transplanting and $M_5=P_2O_5$+½ N a week after transplanting and ½ N four weeks after transplanting.

N as A/S and P_2O_5 as Super applied at 40 lb./ac. each.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 27′×19′. (b) 25′×17′. (v) One guard row alround. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Weight of grain and straw. (iv) (a) 1954—N.A. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1848 lb./ac. (ii) 160.7 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	1968	1932	1878	1450	2055	1804

S.E./mean = 80.4 lb./ac.

Crop :- Paddy. **Ref :- Bh. 55(76).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To study the effect of application of split doses of P_2O_5 and N on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 19.6.1955/31.7.1955. (iv) (a) Field prepared by country plough. (b) As per treatments. (c) 7 to 10 srs./ac. (d) 12″×12″. (e) 2 to 3. (v) Nil. (vi) 498—2A. (vii) Irrigated. (viii) Weeding. (ix) 32.36″. (x) 15.11.1955.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 54(45) on page 80.

5. RESULTS :

(i) 3141 lb./ac. (ii) 273.9 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	3011	3457	2995	3100	3140	3140

S.E./mean = 136.9 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 56(69).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To study the effect of application of split doses of P_2O_5 and N on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Clayey loam. (b) N.A. (iii) 13.6.1956/1.8.1956. (iv) (a) 3 ploughings followed by beaming. (b) Japanese method. (c) 7 to 10 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) Nil. (vi) 498—2A (late). (vii) Irrigated. (viii) 3 hoeings and 3 weedings. (ix) 54.00″. (x) 14.12.1956.

2. TREATMENTS :

Same as in expt. no. 54(45) on page 80.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) 213′×15′ (iii) 4. (iv) (a) 34′2″×15′. (b) 32′5″×13′4″. (v) N.A. (vi) Yes.

4. GENERAL :

(i) No lodging. (ii) Nil. (iii) Dates of germination, flowering, disease incidence, grain and straw yield. (iv) (a) 1954—1956. (b) No. (c) Nil. (v) (a) Patna, Kanke and Bikramganj. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 2254 lb./ac. (ii) 241.1 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	2179	2181	2185	2419	2245	2315

S.E./mean = 120.5 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 59(77).**

Site :- Distt. Agri. Farm, Saharsa. **Type :- 'M'.**

Object :—To find out the relative effect of different kinds of nitrogenous fertilizers on Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 10.6.1959/N.A. (iv) (a) 7 ploughings. (b) Japanese method. (c) 8 srs./ac. (d) 1′×1′. (e) 2. (v) N.A. (vi) BR—8. (vii) Unirrigated. (viii) Weeding. (ix) 44.62″. (x) 20.12.1959.

2. TREATMENTS :

All combinations of (1) and (2)+two extra treatments.

(1) 2 levels of N : N_1=25 and N_2=50 lb./ac.

(2) 6 sources of N : S_1=A/S, S_2=A/S/N, S_3=C/A/N, S_4=A/C, S_5=Urea at sowing and S_6=Urea 15 days after sowing.

Extra treatments : T_1=Control (no manure) and T_2=30 lb./ac. of P_2O_5 as Super+30 lb./ac. of K_2O as Mur. Pot.

All the combinations of (1) and (2) above received the extra treatment T_2 also.

3. DESIGN :

(i) R.B.D. (ii) (a) 14. (b) N.A. (iii) 3. (iv) (a) 35′×24′. (b) 33′×22′. (iv) 1′×1′. (b) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Mild attack of case-worm. (iii) Grain yield. (iv) (a) 1959—1961. (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1067 lb./ac. (ii) 257.2 lb./ac. (iii) Main effect of S alone is highly significant. (iv) Av. yield of grain in lb./ac.

T_1 = 988 lb./ac. and T_2 = 844 lb./ac.

	S_1	S_2	S_3	S_4	S_5	S_6	Mean
N_1	1049	895	1170	1173	988	926	1034
N_2	1389	947	1489	1317	977	782	1150
Mean	1219	921	1330	1245	983	854	1092

S.E. of N marginal mean = 60.6 lb./ac.
S.E. of S marginal mean = 105.0 lb./ac.
S.E. of body of table = 148.5 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 58(135).**

Site :- Distt. Agri. Farm, Saharsa. **Type :- 'M'.**

Object :—To study the effect of growing G.M. crops and applying them as manures to the succeeding Paddy crop.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) As per treatments. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 26.7.1958/N.A. (iv) (a) 7 ploughings. (b) Japanese method. (c) 7 srs./ac. (d) 10″×10″. (e) 2. (v) N.A. (vi) 498—2 A. (vii) Unirrigated. (viii) 3 weedings. (ix) 40.11″. (x) 22.12.1958.

2. TREATMENTS :

5 G.M. crops : G_0=Fallow (control), G_1=*Dhaincha*, G_2=*Kalai*, G_3=*Moong* and G_4=*Sanai*..

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) 40′×27′6″. (b) 38′4″×25′10″. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Fairly good. (ii) Mild attack of case-worm—no control measures taken. (iii) Grain yield. (iv) (a) to (c) No. (v) (a) and (b) Nil. (vi) The area was submerged under water in August. (vii) Nil.

5. RESULTS :

(i) 774 lb./ac. (ii) 214.1 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	G_0	G_1	G_2	G_3	G_4
Av. yield	699	956	675	681	857

S.E./mean = 95.7 lb./ac.

Crop :- *(Kharif)*. **Ref :- Bh. 59(69).**

Site :- Govt. Agri. Farm, Sepaya. **Type :- 'M'.**

Object :—To study the effect of growing G.M. crops and applying them as manures to the succeeding Paddy crop.

1. BASAL CONDITIONS :

(i) (a) G.M.—Paddy. (b) As per treatments. (c) Nil. (ii) (a) Clay loam. (b) N.A. (iii) N.A./2, 3.8.1959. (iv) (a) 3 ploughings by Bihar plough. One operation by cultivator. (b) Japanese method. (c) 7 srs./ac. (d) 10″×10″. (e) N.A. (v) Nil. (vi) 498—2A (late). (vii) Irrigated. (viii) Weeding. (ix) 30″. (x) 21 to 25.12.1959.

2. TREATMENTS :

Same as in expt. no. 58(135) above.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) 35′×24′. (b) 33′×22′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) N.A. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1531 lb./ac. (ii) 151.2 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	G_0	G_1	G_2	G_3	G_4
Av. yield	1106	2018	1478	1457	1595

S.E./mean = 67.6 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 56(107).**

Site :- Govt. Agri. Farm, Sepaya. **Type :- 'M'.**

Object :—To study the comparative effect of different kinds of phosphates on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Clayey loam. (b) N.A. (iii) N.A./10.8.1956. (iv) (a) 4 ploughings by Bihar plough. (b) Japanese method. (c) 8 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) F.Y.M. at 80 mds./ac. (vi) BR—34 (early *Aman*). (vii) Irrigated. (viii) 2 weedings and hoeings. (ix) 5.65″. (x) 11 to 14.12.1956.

2. TREATMENTS :

7 manurial treatments : M_0=Control, M_1=A/S, M_2=A/S+Super, M_3=A/S+B.M., M_4=A/S+Rock Phos. M_5=A/S+Sodium Phos. and M_6=A/S+Di-Cal Phos.

N as A/S and P_2O_5 as above sources applied at 40 lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 5. (iv) (a) and (b) 33′×22′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1956—1958. (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1841 lb./ac. (ii) 93.0 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6
Av. yield	1394	1585	2319	1795	1894	1937	1961

S.E./mean = 93.4 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 57(123).**

Site :- Govt. Agri. Farm, Sepaya. **Type :- 'M'.**

Object :—To study the comparative effect of different kinds of phosphates on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Clay loam. (b) N.A. (iii) N.A./30, 31.7.1957. (iv) (a) One ploughing by Bihar plough, one by country plough and one operation by cultivator. (b) Japanese method. (c) 7 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) Nil. (vi) BR—34 (early). (vii) Irrigated. (viii) 1 weeding. (ix) 32.97″. (x) 24 to 30.11.1957.

2. TREATMENTS :

6 manurial treatments : M_0=Control, M_1=A/S, M_2=A/S+Super, M_3=A/S+B.M., M_4=A/S+Rock Phos. and M_5=A/S+Di-Cal. Phos.

A/S and P_2O_5 as per the sources applied at 40 lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 5. (iv) (a) 35′×24′. (b) 33′×22′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1557 lb./ac. (ii) 294.6 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	1092	1279	2311	1398	1463	1799

S.E./mean = 131.7 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 58(110).**

Site :- Govt. Agri. Farm, Sepaya. **Type :- 'M'.**

Object :—To study the comparative effect of different kinds of phosphates on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Follow—Paddy. (b) Fallow. (c) Nil. (ii) (a) Clay loam. (b) N.A. (iii) N.A./3, 4.8.1958. (iv) (a) 1 ploughing by Bihar plough, one operation by cultivator and one ploughing by country plough. (b) Japanese method. (c) 7 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) Nil. (vi) BR—34 (early). (vii) Irrigated. (viii) 1 weeding. (ix) 49.19″. (x) 17 to 22.12.1958.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 57(123) on page 84.

4. GENERAL :

(i) Good. (ii) Attack of *gundli* bug by 2nd week of September. Gammaxene dusted. (iii) No. of tillers and yield of grain. (iv) (a) 1956—1958. (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1722 lb./ac. (ii) 176.8 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	1308	1848	2160	1644	1704	1668

S.E./mean = 79.1 lb./ac.

Crop :- Paddy. **Ref :- Bh. 55(167).**

Site :- Govt. Agri. Farm, Sepaya. **Type :- 'M'.**

Object :—To test the effect of compost on soil fertility and crop yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Clay loam. (b) N.A. (iii) 22.6.1955/7, 8.8.1955. (iv) (a) 2 ploughings by Bihar plough and one by country plough. (b) Transplanting. (c) 10 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) Nil. (vi) BK—115 (early). (vii) Irrigated. (viii) 1 weeding. (ix) 37.64″. (x) 6.12.1955.

2. TREATMENTS :

6 manurial treatments : M_0=Control (no manure), M_1=40 lb./ac. of N as compost, M_2=80 lb./ac. of N as compost, $M_3=M_1+40$ lb./ac. of P_2O_5 as Super, $M_4=M_1+M_3$, and M_5=40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super.

3. DESIGN:

(i) R.B.D. (ii) (a) 6. (b) 49′×142′. (iii) 5. (iv) (a) and (b) 49′×22′. (v) N.A. (vi) Yes.

4. GENERAL:

(i) Stand fair—growth poor in control plots. Crop lodged in NP plots on 28.10.1955. (ii) Nil. (iii) Biometric observations and grain yield. (iv) (a) No. (b) and (c) —. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS:

(i) 1220 lb./ac. (ii) 212.7 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	925	1157	1228	1281	1351	1376

S.E./mean = 90.1 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 56(114).**

Site :- Govt. Agri. Farm, Sepaya. **Type :- 'M'.**

Object :—To study the effect of growing crops and applying them to the succeeding Paddy crop.

1. BASAL CONDITIONS :

(i) (a) and (b) G.M. crops as per treatments. (c) Nil. (ii) (a) Clayey loam. (b) N.A. (iii) N.A./8.8.1956. (iv) (a) 4 ploughings by *desi* plough. (b) Japanese method. (c) 7 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super at planting. (vi) 498—2 A (late). (vii) Irrigated. (viii) 1 weeding. (ix) 5.65″. (x) 18 and 19.12.1956.

2. TREATMENTS:

4 G.M. crops preceding paddy : G_0= Fallow (control), G_1=*Dhaincha*, G_2=*Kalai* and G_3=*Moong*.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 33′×22′. (b) 31½′×20½′. (v) 9″×9″. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS:

(i) 1618 lb./ac. (ii) 407 lb./ac. (ii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	G_0	G_1	G_2	G_3
Av. yield	1458	1866	1562	1588

S.E./mean = 166 lb./ac.

Crop :- Paddy. **Ref :- Bh. 55(166).**

Site :- Govt. Agri. Farm, Sepaya. **Type :- 'M'.**

Object :—To study the effect of Mur. Pot. on Paddy yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Masoor*. (c) 5 md./ac. of oil cake+2½ md./ac. of Super. (ii) (a) Sandy clay loam. (b) N.A. (iii) 22.6.1955/31.7.1955 and 1.8.1955. (iv) (a) 2 ploughings by Bihar senior plough. (b) Transplanting. (c) 10 srs./ac. (d) 10″×10″. (e) 3 to 4. (v) Nil. (vi) BK—2206 (early). (vii) Unirrigated. (viii) One weeding. (ix) 37.64″. (x) 23.11.1955.

2. TREATMENTS:

5 manurial treatments : M_0=Control, M_1=40 lb./ac. of N as A/S, M_2=M_1+40 lb./ac. of P_2O_5 as Super, M_3=M_1+40 lb./ac. of K_2O as Mur. Pot. and M_4=M_2+40 lb./ac. of K_2O as Mur. Pot.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) 33′×173′. (iii) 4. (iv) (a) and (b) 33′×33′. (v) Nil. (vi) Yes

4. GENERAL :

(i) Stand good. (ii) Nil. (iii) Biometric observations and grain yield. (iv) (a) 1955—contd. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS:

(i) 1821 lb./ac. (ii) 211.2 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	1782	1818	1876	1774	1854

S.E./mean = 105.6 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 56(111).**

Site :- Govt. Agri. Farm, Sepaya. **Type :- 'M'.**

Object :—To study the effect of Mur. Pot. on Paddy yield.

1. BASAL CONDITIONS

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Clay loam. (b) N.A. (iii) N.A./28.7.1956. (iv) (a) 4 ploughings by Bihar plough. (b) Japanese method. (c) 7 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) Nil. (vi) BR—34 (early *Aman*). (vii) Irrigated. (viii) 2 weedings. (ix) 5.65″. (x) 9,10.12.1956.

2. TREATMENTS :

Same as in expt. no. 55(166) on page 86.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) 120′×33′. (iii) 4. (iv) (a) and (b) 33′×22′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1955—contd. (b) No. (c) Nil. (v) (a) Sabour. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1955 lb./ac. (ii) 458.7 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	1557	1938	2120	2096	2066

S.E./mean = 205 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 57(124).**

Site :- Govt. Agri. Farm, Sepaya. **Type :- 'M'.**

Object :—To study the effect of Mur. Pot. on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Clay loam. (b) N.A. (iii) N.A./6.8.1957. (iv) (a) 2 ploughings by Bihar plough. (b) Japanese method. (c) 7 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) Nil. (vi) 32.97″. (vii) Unirrigated. (viii) Weeding and hoeing. (ix) 32.97″. (x) 1 to 5.12.1957.

2. TREATMENTS :

Same as in expt. no. 55(166) on page 86.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 35′×24′. (b) 33′×22′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Tiller no., yield of grain and straw. (iv) (a) 1955—1959. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1630 lb./ac. (ii) 130.8 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	976	1246	1747	1952	2229

S.E./mean = 65.4 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 58(109).**

Site :- Govt. Agri. Farm, Sepaya. **Type :- 'M'.**

Object :—To study the effect of Mur. Pot. on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Fallow. (c) Nil. (ii) (a) Clay loam. (b) N.A. (iii) N.A./5.8.1958. (iv) (a) One ploughing by Bihar plough, one operation by cultivator and one ploughing by country plough. (b) Japanese method. (c) 7 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) Nil. (vi) BR—34 (early). (vii) Unirrigated. (viii) One weeding. (ix) 49.19″. (x) 3 to 6.12.1958.

2. TREATMENTS :

Same as in expt. no. 55(166) on page 86.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 35′×24′. (b) 33′×22′. (v) 1′ alround. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Attack of *gundli* bug—gammaxene dusted. (iii) No. of tillers and grain yield. (iv) (a) 1955—contd. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1596 lb./ac. (ii) 136.3 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	1125	1395	1830	1620	2010

S.E./mean = 68.2 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 59(64).**

Site :- Govt. Agri. Farm, Sepaya. **Type :- 'M'.**

Object :—To study the effect of Mur. Pot. on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Clay loam. (b) N.A. (iii) N.A./8.8.1959. (iv) 2 ploughings by Bihar plough. (b) Japanese method. (c) 7 srs./ac. (d) 10″×10″. (e) —. (v) Nil. (vi) BR—34. (vil) Unirrigated. (viii) Weeding. (ix) 30″. (x) 29.11.1959 to 3.12.1959.

2. TREATMENTS :

Same as in expt. no. 55(166) on page 86.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 57(124) on page 87.

5. RESULTS :

(i) 2495 lb./ac. (ii) 200.6 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	1718	2540	2719	2611	2889

S.E./mean = 100.3 lb./ac.

Crop :- Paddy. **Ref :- Bh. 55(165).**

Site :- Govt. Agri. Farm, Sepaya. **Type :- 'M'.**

Object :—To study the effect of Paira crops on the yield of succeeding Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Paddy—*Paira*—Paddy. (b) *Paira* crops. (c) Nil. (ii) (a) Clay loam. (b) N.A. (iii) 22.6.1955/12 to 14.8.1955. (iv) (a) 2 ploughings with Bihar senior plough, 2 ploughings by country plough. (b) Transplanting. (c) 10 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) 20 lb./ac. of P_2O_5 as Super+15 lb./ac. of N as A/S applied to paddy at the time of puddling and 15 lb./ac. of N as A/S—3 weeks after transplanting. (vi) 498—2A (late). (vii) Unirrigated. (viii) 1 weeding. (ix) 42.42″. (x) 16.12.1955.

2. TREATMENTS :

All combinations of (1) and (2)+a control.

(1) 2 *paira* crops : G_1=Gram and G_2=*Khesari*.

(2) 2 levels of application : L_0=Nil and L_1=Full application of green matter.

Seed rates of gram and *khesari* 40 srs./ac. and 30 srs./ac. respectively.

3. DESIGN :

i) R.B.D. (ii) (a) 5. (b) 72′×81′. (iii) 4. (iv) (a) 72′×15′. (b) 70′6″×13′6″. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Gram and *khesari* were very poor. Paddy was medium. (ii) Nil. (iii) Biometric observation and straw yield. (iv) (a) No. (b) and (c) —. (v) (a) All Govt. farms. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 831 lb./ac. (ii) 213.8 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain lb./ac.

Control = 884 lb./ac.

	G_1	G_2	Mean
L_0	700	780	740
L_1	835	957	896
Mean	767	869	818

S.E. of L or G marginal mean = 75.6 lb./ac.

S.E. of body of table = 106.9 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 55(248).**

Site :- Govt. Agri. Farm, Siris. **Type :- 'M'.**

Object :—To test the effect of Potash on Paddy yield.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Clay loam. (b) N.A. (iii) N.A./18.8.1955. (iv) (a) 5 ploughings. (b) Japanese method. (c) 8 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) Nil. (vi) BK—115. (vii) Nil. (viii) 2 weedings and hoeings. (ix) N.A. (x) 24.11.1955.

2. TREATMENTS :

5 manurial treatments : M_0=Control, M_1=40 lb./ac. of N as A/S, M_2=M_1+40 lb./ac. of P_2O_5, M_3=M_1+40 lb./ac. of K_2O as Mur. Pot. and M_4=M_3+40 lb./ac. of P_2O_5 as Super.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 68′×16′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Grain and straw yield. (iv) (a) to (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 640 lb./ac. (ii) 85.6 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	M	M_1	M_2	M_3	M_4
Av. yield	484	638	659	690	731

S.E./mean = 42.8 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 58(305).**

Site :- Govt. Agri. Farm, Siris. **Type :- 'M'.**

Object:—To study the effect of growing G.M. crops and applying them as manures to the succeeding Paddy crop.

1. BASAL CONDITIONS :

(i) (a) and (b) As per treatments. (c) Nil. (ii) (a) Clayey. (b) N.A. (iii) N.A./19.8.1958. (iv) (a) 5 ploughings. (b) Japanese method. (c) 10 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) Nil. (vi) BK—36. (vii) Nil. (viii) Weeding and hoeing. (ix) N.A. (x) 20.11.1958.

2. TREATMENTS :

5 green manures: G_0=Fallow (control), G_1=*Dhaincha*, G_2=*Kalai*, G_3=*Moong* and G_4=*Sanai*.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) N.A. (b) 27′×40′. (v) N.A. (vi) Yes.

4. GENERAL:

(i) and (ii) N.A. (iii) Grain and straw yield. (iv) (a) to (c) No. (v) to (vii) Nil.

5. RESULTS:

(i) 2474 lb./ac. (ii) 1152 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain lb./ac.

Treatment	G_0	G_1	G_2	G_3	G_4
Av. yield	2182	2439	2605	2124	3020

S.E./mean = 515.1 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 58(MAE).**

Site :- M.A.E. Farm, Sabour. **Type :- 'M'.**

Object:—Type II—To study long term effects of levels of N, P, K and bulky manure on continuous cropping under irrigated conditions.

1. BASAL CONDITIONS:

(i) (a) Nil. (b) *Paira* crop. (c) N at 40 lb./ac. as A/S+P_2O_5 at 40 lb./ac. as Super. (ii)) (a) Sandy loam. (b) N.A. (iii) 10.8.1958. (iv) (a) 4 ploughings with *desi* plough. (b) Transplanted. (c) 10 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) Nil. (vi) BK—36 (late). (vii) Irrigated. (viii) 1 weeding by Japanese weeder. (ix) 31.78″. (x) 14.12.1958.

2. TREATMENTS :

All combinations of (1), (2), (3) and (4)

(1) 3 levels of N as A/S : N_0=0, N_1=30 and N_2=60 lb./ac.
(2) 3 levels of P_2O_5 as Super : P_0=0, P_1=30 and P_2=60 lb./ac.
(3) 3 levels of K as Mur. Pot. : K_0=0, K_1=30 and K_2=60 lb./ac.
(4) 2 levels of T.C. : F_0=0 and F_1=5000 lb./ac.

3. DESIGN

(i) $3^3 \times 2$ confd. (ii) (a) 9 plots/block ; 6 blocks/replication. (b) N.A. (iii) 1. (iv) (a) 33′×16½′. (b) 29½′×14⅜′. (v) N.A. (vi) Yes.

4. GENERAL

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) 1958—1962. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2190 lb./ac. (ii) 525.8 lb./ac. (iii) Interaction F×N is highly significant. N effect is significant. Other effects are not significant. (iv) Av. yield of grain in lb./ac.

	N_0	N_1	N_2	P_0	P_1	P_2	K_0	K_1	K_2	Mean
F_0	2050	2683	2059	2085	2250	2457	2232	2094	2465	2264
F_1	1787	1999	2562	2008	2118	2222	2055	2210	2082	2116
Mean	1918	2341	2310	2047	2184	2339	2144	2152	2274	2190
K_0	1745	2352	2335	1985	2213	2233				
K_1	2220	2198	2038	2018	2085	2353				
K_2	1790	2473	2558	2137	2253	2432				
P_0	1808	1987	2345							
P_1	2055	2258	2238							
P_2	1892	2778	2348							

S.E. of N, P or K marginal mean = 123.9 lb./ac.
S.E. of body of N×P, N×K or P×K table = 214.7 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 59(MAE).**
Site :- M.A.E. Farm, Sabour. **Type :- 'M'.**

Object :—Type II—To study long term effect of levels of N, P, K and bulky manure on continuous cropping under irrigated conditions.

1. BASAL CONDITIONS :

(i) (a) Paddy—Gram—Paddy. (b) Gram. (c) As per treatments. (ii) (a) Sandy loam. (b) N.A. (iii) 10 to 13.8.1959. (iv) (a) 4 ploughings by *desi* plough. (b) Japanese method. (c) 10 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) Nil. (vi) BK—36. (vii) Irrigated. (viii) 1 hand weeding. (ix) 25.7″. (x) 16 to 18.12.1959.

2. TREATMENTS:

All combinations of (1), (2), (3) and (4)
(1) 3 levels of N as A/S : $N_0=0$, $N_1=30$ and $N_2=60$ lb./ac.
(2) 3 levels of P_2O_5 as Super : $P_0=0$, $P_1=30$ and $P_2=60$ lb./ac.
(3) 3 levels of K as Mur. Pot. : $K_0=0$, $K_1=30$ and $K_2=60$ lb./ac.
(4) 2 levels of bulky manure as T.C. : $F_0=0$ and $F_1=5000$ lb./ac.

3. DESIGN:

(i) $3^3\times2$ confd. (ii) (a) 9 plots/block ; 6 blocks/replication. (b) N.A. (iii) 1. (iv) (a) 33′×16½′. (b) 29½′×14¾′. (v) Yes, details N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) 1958—1962. (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) Heavy floods for 5 days from 2.10.1959. (vii) Nil.

5. RESULTS:

(i) 1403 lb./ac. (ii) 310.3 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	K_0	K_1	K_2	F_0	F_1	Mean
N_0	1203	1508	1362	1230	1307	1538	1454	1262	1358
N_1	1358	1466	1277	1304	1327	1471	1647	1087	1367
N_2	1500	1460	1493	1639	1348	1466	1642	1326	1484
Mean	1354	1478	1377	1391	1327	1492	1581	1225	1403
F_0	1448	1609	1686	1604	1488	1651			
F_1	1260	1347	1069	1178	1165	1332			
K_0	1394	1394	1387						
K_1	1288	1527	1167						
K_2	1381	1515	1579						

S.E. of N, P or K marginal mean = 73.1 lb./ac.

S.E. of body of N×P, N×K or P×K table = 126.7 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 59(MAE)**

Site :- M.A.E. Farm, Sabour. **Type :- 'M'.**

Object :—Type IV—To study the effect of direct application of phosphate on legumes and the effect of N applied to the succeeding crop of Paddy under irrigated conditions.

1. BASAL CONDITIONS :

(i) (a) Gram+Pea—Paddy—Gram+Pea. (b) Gram and Pea (c) As per treatments. (ii) (a) Sandy loam. (b) N.A. (iii) 22 to 25.7.1959. (iv) (a) 4 ploughings by *desi* plough. (b) Japanese method. (c) 10 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) Nil. (vi) BK—36. (vii) Irrigated. (viii) One hand weeding. (ix) 25.7″. (x) 18 to 20.12.1959.

2. TREATMENTS:

Main-plot treatments :

All combinations of (1) and (2)+a control (fallow—L_0P_0)

(1) 3 levels of P_2O_5 as Super : $P_0=0$, $P_1=40$ and $P_2=80$ lb./ac.

(2) 2 legumes : L_1=Gram and L_2=Pea.

Sub-plot treatments :

3 levels of N as A/S : $N_0=0$, $N_1=15$ and $N_2=30$ lb./ac.

P_2O_5 applied to L_1 and L_2 during *Rabi*.

3. DESIGN :

(i) Split-plot. (ii) (a) 7 main-plots/block ; 3 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a) 33′×16½′. (b) 29½′×14¾′. (v) and (vi) Yes..

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) 1958—1962. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1479 lb./ac. (ii) (a) 478.1 lb./ac. (b) 295.4 lb./ac. (iii) Only N×LP effect is significant. (iv) Av. yield of grain lb./ac.

	L_0P_0	L_1P_0	L_1P_1	L_1P_2	L_2P_0	L_2P_1	L_2P_2	Mean
N_0	1439	1380	1647	1385	1385	1472	1510	1460
N_1	1196	1289	1290	1635	1622	1952	1184	1453
N_2	1623	1506	1541	1631	1522	1347	1514	1526
Mean	1419	1392	1493	1550	1509	1590	1403	1479

S.E. of difference of two

1. LP marginal means = 225.4 lb./ac.
2. N marginal means = 91.2 lb./ac.
3. N means at the same level of LP = 241.2 lb./ac.
4. LP means at the same level of N = 299.3 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref:- Bh. 58(MAE).**

Site :- M.A.E. Farm, Sabour. **Type :- 'M'.**

Object :—Type V—To study the most suitable time of application of N to Paddy under irrigated conditions.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy (c) N at 40 lb./ac. as A/S+P_2O_5 at 40 lb./ac. as Super. (ii) (a) Sandy loam. (b) N.A. (iii) 22.8.1958. (iv) (a) 3 ploughings with *desi* plough. (b) Transplanted. (c) 10 srs./ac. (d) 10"×10". (e) 2. (v) Nil. (vi) BK—36 (late). (vii) Irrigated. (viii) Weeding by Japanese weeder. (ix) 31.78". (x) 15 and 16.12.1958.

2. TREATMENTS :

All combinations of (1) and (2)+a control

(1) 2 sources of 40 lb./ac. of N : S_1=Urea and S_2=A/S.

(2) 7 times of application of N : T_1=Before planting, T_2=At planting, T_3=At tillering, T_4=$\frac{1}{2}$ before planting+$\frac{1}{2}$ at tillering, T_5=$\frac{1}{2}$ at planting+$\frac{1}{2}$ at tillering, T_6=$\frac{1}{3}$ before planting+$\frac{1}{3}$ at tillering+$\frac{1}{3}$ a week before flowering and T_7=$\frac{1}{3}$ at planting+$\frac{1}{3}$ at tillering+$\frac{1}{3}$ a week before flowering.

3. DESIGN :

(i) R.B.D. (ii) (a) 15. (b) N.A. (iii) 3. (iv) (a) 33'×16$\frac{1}{2}$'. (b) 29$\frac{1}{2}$'×14$\frac{3}{4}$'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Case-worm attack. Aldrin sprayed. (iii) Grain yield. (iv) (a) 1958—1962. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2239 lb./ac. (ii) 614.6 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

Control= 1863 lb./ac.

	T_1	T_2	T_3	T_4	T_5	T_6	T_7	Mean
S_1	2348	2589	2245	2305	2631	1930	2014	2295
S_2	2092	2286	2665	2211	1804	2597	2005	2237
Mean	2220	2438	2455	2258	2218	2264	2010	2266

S.E. of S marginal mean = 134.1 lb./ac.
S.E. of T marginal mean = 250.9 lb./ac.
S.E. of body of table or control mean = 434.6 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- 54(TCM).**

Centre :- Rameshwar (c.f.). **Type :- 'M'.**

Object :—Type I—To study the effect of different levels and sources of N on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red loam—pH. 60. (iii) N.A. (iv) July-August. (v) (a) N.A. (b) Transplanting. (c) to (e) N.A. (vi) N.A. (vii) Mainly unirrigated. (viii) to (ix) N.A. (x) Nov-Dec.

2. TREATMENTS :

0 =Control.
N_1 =20 lb./ac. of N as A/S.
N_2 =40 lb./ac. of N as A/S.
N_1'=20 lb./ac. of N as Urea.
N_2'=40 lb./ac. of N as Urea.

3. DESIGN :

(i) and (ii) Eleven community project centres representing the entire Paddy growing tract of the country were selected. From each community project centre one development block was selected. Villages were selected at random from the selected block and a list of cultivators growing paddy for each selected village was prepared. From this list, two cultivators were selected at random and one field each belonging to them was taken for trial. In each selected field an unreplicated trial was laid out. (iii) N.A. (iv) Yes.

4. GENERAL :

(i) Normal. (ii) No. (iii) Yield of grain. (iv) (a) 1953—1956. (b) No. (c) N.A. (v) N.A. (vi) Heavy lodging. (vii) Nil.

5. RESULTS :

Treatment	0	N_1	N_2	N_1'	N_2'
Av. yield	1366	1736	1991	1802	1999

G.M. = 1779 lb./ac. ; S.E./mean = 45.26 lb./ac. and no. of trials = 21.

Crop :- Paddy. **Ref :- Bh. 55(TCM).**
Centre :- Rameshwar (c.f.). **Type :- 'M'.**

Object :—Type I—To study the effect of different levels and sources of N.

1. BASAL CONDITIONS :

Same as in expt. no. 54(TCM) type I above.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(TCM) type I conducted at Rameshwar on page 93.

4. GENERAL

(i) Normal. (ii) Nil. (iii) Yield of grain. (iv) (a) 1953—1955. (b) No. (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

Treatment	0	N_1	N_2	N_1'	N_2'
Av. yield	1421	1732	2024	1786	2089

G.M. = 1810 lb./ac. ; S.E./mean = 53.49 lb./ac. and no. of trials = 21.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 54(TCM).**
Centre :- Rameshwar (c.f.). **Type :- 'M'.**

Object :—Type II—To study the effect of different levels and types of N and P_2O_5.

1. BASAL CONDITIONS :

Same as in expt. no. 54(TCM) type I conducted at Rameshwar on page 93.

2. TREATMENTS :

0 =Control.
P =Super at 20 lb./ac. of P_2O_5.

N_1P =A/S at 20 lb./ac. of N+20 lb./ac. of P_2O_5 as Super.
N_2P =A/S at 40 lb./ac. of N+20 lb./ac. of P_2O_5 as Super.
$N_1'P$=Urea at 20 lb./ac. of N+20 lb./ac. of P_2O_5 as Super.
$N_2'P$=Urea at 40 lb./ac. of N+20 lb./ac. of P_2O_5 as Super.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 54(TCM) type I on page 93.

5. RESULTS :

Treatment	0	P	N_1P	N_2P	$N_1'P$	$N_2'P$
Av. yield	1456	1580	1802	1893	1917	2090

G.M. = 1790 lb./ac. ; S.E./mean = 46.90 lb./ac. and no. of trials = 21.

Crop :- Paddy. **Ref :- Bh. 55(TCM).**

Centre :- Rameshwar (c.f.). **Type :- 'M'.**

Object :—Type II—To study the effect of different levels and types of N and P_2O_5.

1. BASAL CONDITIONS :

Same as in expt. no. 54(TCM) type I conducted at Rameshwar on page 93.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(TCM) type II conducted at Rameshwar on page 94.

4. GENERAL :

Same as in expt. no. 55(TCM) type I conducted at Rameshwar on page 94.

5. RESULTS :

Treatment	0	P	N_1P	N_2P	$N_1'P$	$N_2'P$
Av. yield	1409	1788	1977	2115	1986	2200

G.M. = 1913 lb./ac. ; S.E./mean = 66.65 lb./ac. and no. of trials = 19.

Crop :- Paddy ***(Kharif)*****.** **Ref :- Bh. 54(TCM).**

Centre :- Rameshwar (c.f.). **Type :- 'M'.**

Object :—Type III—To study the effect of types and levels of P_2O_5 along with N.

1. BASAL CONDITIONS :

Same as in expt. no. 54(TCM) type I conducted at Rameshwar on page 93.

2. TREATMENTS :

0 =Control.
N_1 =20 lb./ac. of N as A/S.
N_1P_1 =20 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super.
N_1P_2 =20 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super.
N_1P_1'=20 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Di-Cal. Phos.
N_1P_2'=20 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Di-Cal. Phos.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 54(TCM) type I on page 93.

5. RESULTS :

Treatment	0	N_1	N_1P_1	N_1P_2	N_1P_1	N_1P_2
Av. yield	1366	1728	1786	1925	2024	2148

G.M. = 1829 lb./ac. ; S.E./mean = 37.03 lb./ac. and no. of trials = 20.

Crop :- Paddy. **Ref :- Bh. 55(TCM).**

Centre :- Rameshwar (c.f.). **Type :- 'M'.**

Object :—Type III—To study the effect of types and levels of P_2O_5 along with N.

1. BASAL CONDITIONS :

Same as in expt. no. 54(TCM) type I conducted at Rameshwar on page 93.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(TCM) type III conducted at Rameshwar on pagg 95.

4. GENERAL :

Same as in expt. no. 55(TCM) type I conducted at Rameshwar on page 93.

5. RESULTS :

Treatment	0	N_1	N_1P_1	N_1P_2	N_1P_1'	N_1P_2'
Av. yield	1257	1508	1751	1937	1913	2084

G.M. = 1742 lb./ac. ; S.E./mean = 41.97 lb./ac. and no. of trials = 21.

Crop :- Paddy ***(Kharif)*****.** **Ref :- Bh. 54(TCM).**

Centre :- Rameshwar (c.f). **Type :- 'M'.**

Object :—Type IV—To study the effect of N, P and K on the yield of Paddy.

1. BASAL CONDITIONS :

Same as in expt. no. 54(TCM) type I conducted at Rameshwar on page 93.

2. TREATMENTS :

0 = Control.
N_1 = 20 lb./ac. of N as A/S.
N_1P_1 = 20 lb./ac. of N as A/S + 20 lb./ac. of P_2O_5 as Super.
N_1P_2 = 20 lb./ac. of N as A/S + 40 lb./ac. of P_2O_5 as Super.
$N_1P_1K_1$ = 20 lb./ac. of N as A/S + 20 lb./ac. of P_2O_5 as Super + 20 lb./ac. of K_2O as Pot. Sul.
$N_1P_1K_2$ = 20 lb./ac. of N as A/S + 20 lb./ac. of P_2O_5 as Super + 40 lb./ac. of K_2O as Pot. Sul.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 54(TCM) type I on page 93.

5. RESULTS :

Treatment	0	N_1	N_1P_1	N_1P_2	$N_1P_1K_1$	$N_1P_1K_2$
Av. yield	1448	1744	1868	1950	2139	2230

G.M. = 1896 lb./ac. ; S.E./mean = 28.80 lb./ac. and no. of trials = 19.

Crop :- Paddy. **Ref :- Bh. 55(TCM).**

Centre :- Rameshwar (c.f.). **Type :- 'M'.**

Object :—To study the effect of N, P and K on Paddy yield.

1. BASAL CONDITIONS :

Same as in expt. no. 54(TCM) type I conducted at Rameshwar on page 93.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(TCM) type IV conducted at Rameshwar on page 96.

4. GENERAL :

Same as in expt. no. 55(TCM) type I conducted at Rameshwar on page 94.

5. RESULTS :

Treatment	0	N	NP_1	NP_2	NP_1K_1	NP_1K_2
Av. yield	1502	1795	2073	2199	2283	2237

G.M. = 2015 lb./ac. ; S.E./mean = 64.18 lb./ac. and no. of trials = 23.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 54(TCM).**

Centre :- Pusa (c.f.) **Type :- 'M'.**

Object :—Type I—To study the effect of different levels and sources of N.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Grey and brown soils of Indo-Gangetic basins impregnated with salts. (iii) N.A. (iv) June—July. (v) (a) N.A. (b) Transplanting. (c) —. (d) and (e) N.A. (vi) N.A. (vii) Unirrigated. (viii) and (ix) N.A. (x) Nov.—Dec.

2. TREATMENTS :

0 =Control.
N_1 =20 lb./ac. of N as A/S.
N_2 =40 lb./ac. of N as A/S.
N'_1=20 lb./ac. of N as Urea.
N'_2=40 lb./ac. of N as Urea.
Fertilizers were applied before or at the time of puddling.

3. DESIGN :

Same as in expt. no. 54(TCM) type I conducted at Rameshwar on page 93.

4. GENERAL

(i) Normal. (ii) No. (iii) Yield of grain. (iv) (a) 1953—1954. (b) No. (c) N.A. (v) N.A. (vi) Floods damaged the crop. (vii) Nil.

5. RESULTS :

Treatment	0	N_1	N_2	N_1'	N_2'
Av. yield	1295	1648	1757	2050	2083

G.M. = 1767 lb./ac. ; S.E./mean = 80.64 lb./ac. and no. of trials = 12.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 54(TCM).**

Centre :- Pusa (c.f.). **Type :- 'M'.**

Object :—Type II—To study the effect of different levels and types of N and P_2O_5.

1. BASAL CONDITIONS :

Same as in expt. no. 54(TCM) type I above.

TREATMENTS :

0 =Control.
P =20 lb./ac. of P_2O_5 as Super.
N_1P =20 lb./ac. of P_2O_5 as Super+20 lb./ac. of N as A/S.
N_2P =20 lb./ac. of P_2O_5 as Super+40 lb./ac. of N as A/S.

$N_1'P$ =20 lb./ac. of P_2O_5 as Super+20 lb./ac. of N as Urea.
$N_2'P$ =20 lb./ac. of P_2O_5 as Super+40 lb./ac. of N as Urea.
Fertilizers were applied before or at the time of puddling.

3. DESIGN :

Same as in expt. no. 54(TCM) type I conducted at Rameshwar on page 93.

4. GENERAL :

Same as in expt. no. 54(TCM) type I on page 97.

5. RESULTS :

Treatment	0	P	N_1P	N_2P	$N_1'P$	$N_2'P$
Av. yield	1226	1483	1571	1815	1763	1729

G.M. = 1598 lb./ac. ; S.E./mean = 59.25 lb./ac. ; no. of trials = 23.

Crop :- Paddy. **Ref :- Bh. 54(TCM).**

Centre :- Pusa (c.f.) **Type :- 'M'.**

Object :—Type IV—To study the effect of N, P and K on Paddy.

1. BASAL CONDITIONS :

Same as in expt. no. 54(TCM) type I conducted at Pusa on Paddy at page 97.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(TCM) type IV conducted at Rameshwar on page 96.

4. GENERAL :

Same as in expt. no. 54(TCM) type I conducted at Pusa on page 97.

5. RESULTS :

Treatment	0	N_1	N_1P_1	N_1P_2	$N_1P_1K_1$	$N_1P_1K_2$
Av. yield in lb./ac.	860	1412	1656	1734	1867	1772

G.M. = 1550 lb./ac. ; S.E./mean = 91.34 lb./ac. and no. of trials = 17.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 58(SFT).**

Centre :- Bhagalpur (c.f.). **Type :- 'M'.**

Object :—Type A—To study the response of Paddy to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Alluvial. (iii) Nil. (iv) August. (v) (a) 3 to 5 ploughings and planking. (b) Transplanting. . (c) —. (d) and (e) N.A. (vi) N.A. (vii) Some trials are irrigated and some unirrigated. (viii) Weeding. (ix) N.A. (x) November—December.

2. TREATMENTS :

0 =Control (no manure).
n =20 lb./ac. of N as A/S.
p =20 lb./ac. of P_2O_5 as Super.
np =20 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super.
k =20 lb./ac. of K_2O as Pot. Sul.
nk =20 lb./ac. of N as A/S+20 lb./ac. of K_2O as Pot. Sul.
pk =20 lb./ac. of P_2O_5 as Super+20 lb./ac. of K_2O as Pot. Sul.
npk=20 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super+20 lb./ac. of K_2O as Pot. Sul.

3. DESIGN:

(i) and (ii) The district has been divided into four agriculturally homogeneous zones and one field assistant posted in each zone. The field assistant conducts the trials in one Revenue circle or thana in the zone and the circle/thana is changed once in two years within the same zone. Each field assistant is required to conduct 31 trials in a year, 8 on *kharif* cereal, 8 on *rabi* cereal, 8 on cash crops, 4 on an oilseed crop and 3 on a leguminous crop. Half the number of trials conducted are of type A and the other half of type B on crops other than the legumes. The three trials on legumes are of type C. Residual effects of phosphate application are studied on type C trials in two out of the four zones in each district every year. The experiments are laid out in randomly located fields in randomly selected villages in each of the 4 zones at the rate of one experiment per village. (iii) (a) 1/40 ac. (b) 1/80 ac. (iv) Yes.

4. GENERAL:

(i) Normal. (ii) N.A. (iii) Grain yield. (iv) (a) 1958—contd. (b) No. (c) No. (v) (a) and (b) As per design. (vi) and (vii) Nil.

5. RESULTS:

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	510	354	115	53.5	123	41	58	82	37.9

Control yield = 1605 lb./ac. and no. of trials = 15.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 59(SFT).**

Centre :- Bhagalpur (c.f.). **Type :- 'M'.**

Object :—Type A—To study the response of Paddy to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS to 4. GENERAL:

Same as in expt. no. 58(SFT) on page 98 conducted at Bhagalpur.

5. RESULTS:

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	527	272	123	43.6	49	33	33	16	24.7

Control yield = 1366 lb./ac. and no. of trials = 16.

Crop :- Paddy *(Kharif)* **Ref :- Bh. 58(SFT).**

Centre :- Champaran (c.f.). **Type :- 'M'.**

Object :—Type A—To study the response of Paddy to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS:

(i) (a) to (c) N.A. (ii) Alluvial. (iii) N.A. (iv) July—August 1958. (v) (a) 3 to 8 ploughings. (b) Transplanting. (c) —. (d) and (e) N.A. (vi) N.A. (vii) Some trials are irrigated while some are unirrigated. (viii) N.A. (ix) N.A. (x) December 1958.

2. TREATMENTS to 4. GENERAL:

Same as in expt. no. 58(SFT) type A on page 98 conducted at Bhagalpur.

5. RESULTS:

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	461	354	123	49.4	33	8	—8	66	39.5

Control yield = 1448 lb./ac. and no. of trials = 16.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 59(SFT).**

Centre :- Champaran (c.f.). **Type :- 'M'.**

Object :—Type A—To study the response of Paddy to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Alluvial soil rich in lime. (iii) N.A. (iv) July—August 1959. (v) (a) 3 to 8 ploughings. (b) Transplanting. (c) —. (d) and (e) N.A. (vi) N.A. (vii) Some trials are irrigated while some are unirrigated. (viii) N.A. (ix) N.A. (x) December 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type A on page 98 conducted at Bhagalpur.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	403	214	99	27.2	16	—25	8	66	31.3

Control yield = 773 lb./ac. and no. of trials = 16.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 58(SFT).**

Centre :- Gaya (c.f.). **Type :- 'M'.**

Object :—Type A—To study the response of Paddy to levels of N, P and K and applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Alluvial. (iii) No. (iv) August 1958. (v) (a) 3 to 5 ploughings. (b) Transplanting. (c) —. (d) and (e) N.A. (vi) to (ix) N.A. (x) December 1958.

2. TREATMENTS to 4. GENERAL

Same as in expt. no. 58(SFT) type A on page 98 conducted at Bhagalpur.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	527	403	173	45.3	—123	41	140	148	32·1

Control yield = 2115 lb./ac. and no. of trials = 15.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 59(SFT).**

Centre :- Gaya (c.f.). **Type :- 'M'.**

Object :—Type A—To study the response of Paddy to levels of N,P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Alluvial. (iii) N.A. (iv) August 1959. (v) (a) 3 to 6 ploughings. (b) Transplanting. (c) —. (d) and (e) N.A. (vi) N.A. (vii) Some trials are irrigated and some unirrigated. (viii) N.A. (ix) N.A. (x) December 1959 and January 1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type A on page 98 conducted at Bhagalpur.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	403	288	156	28.8	82	91	82	25	25.5

Control yield = 1325 lb./ac. and no. of trials = 16.

Crop :- Paddy ***(Kharif).*** **Ref :- Bh. 58(SFT).**

Centre :- Hazaribagh (c.f.). **Type :- 'M'.**

Object :—Type A—To study the response of Paddy to levels of N,P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red soil. (iii) N.A. (iv) July-August 1958. (v) (a) N.A. (b) Transplanting. (c)—. (d) and (e) N.A. (vi) to (ix) N.A. (x) November—December.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type A on page 98 conducted at Bhagalpur.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	420	362	206	28.8	74	58	107	107	26.3

Control yield = 1391 lb./ac. and no. of trials = 16.

Crop :- Paddy ***(Kharif).*** **Ref :- Bh. 59(SFT).**

Centre :- Hazaribagh (c.f.). **Type :- 'M'.**

Object :—Type A—To study the response of Paddy to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red soil. (iii) N.A. (iv) July August 1959. (v) (a) N.A. (b) Transplanting. (c) —. (d) and (e) N.A. (vi) N.A. (vii) Unirrigated. (viii) Weeding. (ix) N.A. (x) November-December, 1959.

2. TRRATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type A on page 98 conducted at Bhagalpur.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	477	502	444	54.3	156	123	115	16	57.6

Control yield = 790 lb./ac. and no. of trials = 12.

Crop :- Paddy ***(Kharif).*** **Raf :- Bh. 58(SFT).**

Centre :- Monghyr (c.f.). **Type :- 'M'.**

Object :—Type A—To study the response of Paddy to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Alluvial. (iii) N.A. (iv) August 1958. (v) (a) Ploughings. (b) Transplanting. (c) —. (d) and (e) N.A. (vi) to (ix) N.A. (x) December 1958.

2. TREATMENTS to 4. GENERAL:

Same as in expt. no. 58(SFT) type A on page 98 conducted at Bhagalpur.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	222	156	140	56.0	—25	25	—8	91	28.0

Control yield = 1432 lb./ac. and no. of trials = 11.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 59(SFT).**

Centre :- Monghyr (c.f.). **Type :- 'M'.**

Object :—Type A—To study the response of Paddy to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Alluvial. (iii) N.A. (iv) August 1959. (v) (a) 3 to 8 ploughings. (b) Transplanting. (c) —. (d) and (e) N.A. (vi) N.A. (vii) Some trials are irrigated and some are unirrigated, (viii) Weedings. (ix) N.A. (x) December 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type A on page 98 conducted at Bhagalpur.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Ay. response in lb./ac.	387	247	107	33.7	25	—33	33	25	18.9

Control yield = 1086 lb./ac. and no. of trials = 16.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 58(SFT).**

Centre :- Muzaffarpur (c.f.). **Type :- 'M'.**

Object :—Type A—To study the response of Paddy to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Alluvial. (iii) N.A. (iv) August 1958. (v) (a) ploughings. (b) Transplanting. (c) —. (d) and (e) N.A. (vi) to (ix) N.A. (x) December 1958.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type A on page 98 conducted at Bhagalpur.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	411	206	107	30.4	—8	—8	—8	49	37.0

Control yield = 1341 lb./ac. ; and no. of trials = 16.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 59(SFT).**

Centre :- Muzaffarpur (c.f.). **Type :- 'M'.**

Object :—Type A—To study the response of Paddy to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Alluvial soil rich in lime. (iii) N.A. (iv) August 1959. (v) (a) 4 to 10 ploughings. (b) Transplanting. (c) —. (d) and (e) N.A. (vi) N.A. (vii) Some trials are irrigated while some are unirrigated. (viii) Weeding. (ix) N.A. (x) December 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type A on page 98 conducted at Bhagalpur.

5. RESULTS

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	370	247	66	28.8	0	25	66	115	28.8

Control yield = 1094 lb./ac. and no. of trials = 15.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 58(SFT).**

Centre :- Patna (c.f.). **Type :- 'M'.**

Object :—Type A—To study the response of Paddy to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Other alluvial. (iii) N.A. (iv) August 1958. (v) (a) Ploughings. (b) Transplanting. (c) —. (d) and (e) N.A. (vi) to (ix) N.A. (x) November—December 1958.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type A on page 98 conducted at Bhagalpur.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	444	337	140	37.0	66	58	66	99	28.8

Control yield = 1753 lb./ac. and no. of trials = 16.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 59(SFT).**

Centre :- Patna (c.f.). **Type :- 'M'.**

Object :—Type A—To study the response of Paddy to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Other alluvial. (iii) N.A. (iv) August 1959. (v) (a) 4 ploughings. (b) Transplanting. (c) —. (d) and (e) N.A. (vi) N.A. (vii) Some trials are irrigated and some are unirrigated. (viii) N.A. (ix) N.A. (x) November-December 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type A on page 98 conducted at Bhagalpur.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	403	247	247	54.3	—41	74	49	41	23.0

Control mean = 1506 lb./ac. ; and no. of trials = 9.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 58(SFT).**

Centre :- Purnea (c.f.). **Type :- 'M'.**

Object :—Type A—To study the response of Paddy to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Other alluvial. (iii) N.A. (iv) August 1958. (v) (a) Ploughings and planking. (b) Transplanting. (c) —. (d) and (e) N.A. (vi) to (ix) N.A. (x) December 1958.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type A on page 98 conducted at Bhagalpur.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. responns in lb./ac.	49	123	99	18.9	8	8	49	66	9.9

Control yield = 1366 lb./ac. and no. of trials = 6.

Crop :- Paddy *(Kharif)***.** **Ref :- Bh. 59(SFT).**

Centre :- Purnea (c.f.). **Type :- 'M'.**

Object :—Type A—To study the response of Paddy levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Other alluvial. (iii) N.A. (iv) August 1959. (v) (a) 4 to 10 ploughings. (b) Transplanting. (c) —. (d) and (e) N.A. (vi) N.A. (vii) Irrigated. (viii) Weeding. (ix) N.A. (x) December 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type A on page 98 conducted at Bhagalpur.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	115	99	99	24.5	33	33	82	99	21.4

Control yield = 1168 lb./ac. and no. of trials = 15.

Crop :- Paddy *(Kharif)***.** **Ref :- Bh. 58(SFT).**

Centre :- Shahabad (c.f.). **Type :- 'M'.**

Object :—Type A—To study the response of Paddy to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Alluvial. (iii) N.A. (iv) August 1958. (v) (a) Ploughings and planking. (b) Transplanting. (c) —. (d) and (e) N.A. (vi) to (ix) N.A. (x) November 1958.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type A on page 98 conducted at Bhagalpur.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	634	617	798	97.9	−58	—74	156	49	70.8

Control yield = 2485 lb./ac. and no. of trials = 11.

Crop :- Paddy *(Kharif)***.** **Ref :- Bh. 59(SFT).**

Centre :- Shahabad (c.f.). **Type :- 'M'.**

Object :—Type—A—To study the response of Paddy to levels of N, P rnd K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Alluvial. (iii) N.A. (iv) August 1959. (v) (a) 3 to 6 ploughings and planking. (b) Transplanting. (c) —. (d) and (e) N.A. (vi) N.A. (vii) Some trials are irrigated and some are unirrigated. (viii) and (ix) N.A. (x) November 1959.

2. TREATMENTS to 4. GENERAL:

Same as expt. no. 58(SFT) Type A on page 98 conducted at Bhagalpur.

5. RESULTS:

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	411	428	337	28.8	58	—41	115	91	37.0

Control yield = 1662 lb./ac. and no. of trials = 16.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 58(SFT).**

Centre :- Ranchi (c.f.). **Type :- 'M'.**

Object :—Type A—To study the response of Paddy to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red soil. (iii) N.A. (iv) July-August, 1958. (v) (a) Ploughing and planking. (b) Transplanting. (c) —. (d) and (e) N.A. (vi) to (ix) N.A. (x) November-December, 1958.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type A on page 98 conducted at Bhagalpur.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	609	436	214	46.1	99	0	49	82	23.9

Control yield = 1103 lb./ac. and no. of trials = 16.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 59(SFT).**

Centre :- Ranchi (c.f.). **Type :- 'M'.**

Object :—Type A—To study the response of Paddy to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red soil. (iii) No. (iv) July—August 1959. (v) (a) 3 to 5 ploughings and planking. (b) Transplanting. (c) —. (d) and (e) N.A. (vi) N.A. (vii) Unirrigated. (viii) Weedings. (ix) N.A. (x) November—December, 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type A on page 98 conducted at Bhagalpur.

5. RESULTS :

Effect	n	p	k	S.E	np	nk	pk	npk	S.E.
Av. response in lb./ac.	592	411	107	56.0	8	0	8	41	32.1

Control mean = 1086 lb./ac. and no. of trials = 15.

Crop :- Paddy*(Kharif)*. **Ref :- Bh. 58(SFT).**

Centre :- Santhal Paraganas (c.f.). **Type :- 'M'.**

Object :—Type A—To study the response of Paddy to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red soil. (iii) N.A. (iv) July—August, 1958. (v) (a) Ploughing. (b) Transplanting. (c) —. (d) and (e) N.A. (vi) to (ix) N.A. (x) December, 1958.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type A on page 98 conducted at Bhagalpur.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	197	304	66	34.6	—16	—25	—8	16	31.3

Control yield = 1687 lb./ac. and no. of trials = 15.

Crop :- Paddy ***(Kharif).*** **Ref :- Bh. 59(SFT).**

Centre :- Santhal Paraganas (c.f.). **Type :- 'M'.**

Object :—Type A—To study the response of Paddy to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red soil. (iii) N.A. (iv) July-August, 1959. (v) (a) 3 to 5 ploughings. (b) Transplanting. (c) —. (d) and (e) N.A. (vi) N.A. (vii) Some trials are irrigated and some are unirrigated. (viii) Weeding. (ix) N.A. (x) December, 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type A on page 98 conducted at Bhagalpur.

5. RESULTS:

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	370	280	74	42.8	—49	—16	0	0	24.7

Control mean = 1925 lb./ac. and no. of trials = 16.

Crop :- Paddy ***(Kharif).*** **Ref :- Bh. 58(SFT).**

Centre :- Bhagalpur(c.f.). **Type :- 'M'.**

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Alluvial. (iii) N.A. (iv) August-September. (v) (a) Ploughings. (b) Transplanting. (c) —. (d) and (e) N.A. (vi) to (ix) N.A. (x) November-December.

2. TREATMENTS :

0 =Control (no manure)
n_1' =20 lb./ac. of N as Urea.
n_2' =40 lb./ac. of N as Urea.
n_1'''=20 lb./ac. of N as C/A/N.
n_2'''=40 lb./ac. of N as C/A/N.

3. DESIGN :

(i) and (ii) The district has been divided into four agriculturally homogeneous zones and one field assistant posted in each zone. The field assistant conducts the trials in one Revenue circle or thana in the zone and the circle/thana is changed once in two years within the same zone. Each field assistant is required to conduct 31 trials in a year, 8 on *kharif* cereal, 8 on *rabi* cereals, 8 on cash crops, 4 on an oilseed crop and 3 on a leguminous crop. Half the number of trials conducted are of type A and the other half of type B on crops other than the legumes. The three trials on legumes are of type C. Residual effects of phosphate applications are studied on type C trials in two out of the four zones in each district every year. The experiments are laid out in randomly located fields in randomly selected villages in each of the 4 zones at the rate of one experiment per village. (iii) (a) 1/40 ac. (b) 1/80 ac. (iv) Yes.

4. GENERAL :

(i) Normal. (ii) N.A. (iii) Grain yield. (iv) (a) 1958—contd. (b) No. (c) N.A. (v) As per design. (vi) and (vii) Nil.

5. RESULTS :

Treatment	0	n_1'	n_2'	n_1'''	n_2'''
Av. yield	1473	1843	1975	1728	1860

G.M. = 1776 lb./ac. ; S.E. = 50.6 lb./ac. and no. of trials = 16.

Crop :- Paddy ***(Kharif).*** **Ref :- Bh. 59(SFT).**

Site :- Bhagalpur (c.f.). **Type :- 'M'.**

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Alluvial. (iii) N.A. (iv) August. (v) (a) 4 to 6 ploughings. (b) Transplanting. (c) —. (d) and (e) N.A. (vi) N.A. (vii) Some trials are irrigated while some are unirrigated. (viii) Weeding. (ix) N.A. (x) November-December.

2. TREATMENTS :

0 =Control (no manure).
n_1' =20 lb./ac. of N as Urea.
n_2' =40 lb./ac. of N as Urea.
n_1'' =20 lb./ac. of N as A/S/N.
n_2'' =40 lb./ac. of N as A/S/N.
n_1'''=20 lb./ac. of N as C/A/N.
n_2'''=40 lb./ac. of N as C/A/N.

3. DESIGN :

(i) and (ii) The district has been divided into four agriculturally homogeneous zones and one field assistant posted in each zone. The field assistant conducts the trials in one Revenue circle or thana in the zone and the circle/thana is changed once in two years within the some zone. Each field assistant is required to conduct 31 trials in a year, 8 on *kharif* cereal, 8 on *rabi* cereal, 8 on cash crops, 4 on an oilseed crop and 3 on a leguminous crop. Half the number of trials conducted are of type A and the other half of type B on crops other than the legumes. The three trials on legumes are of type C. Residual effects of phosphate application are studied on type C trials in two out of the four zones in each district every year. The experiments are laid out in randomly located fields in randomly selected villages in each of the 4 zones at the rate of one experiment per village. (iii) (a) 1/40 ac. (b) 1/80 ac. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) N.A. (iii) Grain yield. (iv) (a) 1958—contd. (b) No. (c) N.A. (v) As per design. (vi) and (vii) Nil.

5. RESULTS :

Treatment	0	n_1'	n_2'	n_1''	n_2''	n_1'''	n_2'''
Av. yield	1349	1728	2304	1596	1975	1555	1819

G.M. = 1761 lb./ac. ; S.E./mean = 42.5 lb./ac. and no. of trials = 14.

Crop :- Paddy ***(Kharif).*** **Ref :- Bh. 58 (SFT).**

Site :- Champaran (c.f.). **Type :- 'M'.**

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 58(SFT) type B on page 106 conducted at Bhagalpur.

5. RESULTS :

Treatment	0	n_1'	n_2'	n_1'''	n_2'''
Av. yield	1300	1596	1893	1440	1703

G.M. = 1586 lb./ac. ; S.E./mean = 51.2 lb./ac. and no. of trials = 15.

Crop :- Paddy ***(Kharif).*** **Ref :- Bh. 59(SFT).**

Centre :- Champaran (c.f.). **Type :- 'M'.**

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Alluvial. (iii) N.A. (iv) August-September. (v) (a) 6 to 12 ploughings and planking. (b) Transplanting. (c) —. (d) and (e) N.A. (vi) N.A. (vii) Some trials are irrigated while some are unirrigated. (viii) N.A. (ix) N.A. (x) November-December.

2. TREATMENTS to GENERAL

Same as in expt. no. 59(SFT) type B on page 107 conducted at Bhagalpur.

5. RESULTS :

Treatment	0	n_1'	n_2'	n_1''	n_2''	n_1'''	n_2'''
Av. yield	568	897	1070	856	1086	831	963

G.M. = 896 lb./ac. ; S.E./mean = 53.5 lb./ac. and no. of trials = 16.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 58(SFT).**

Centre :- Gaya (c.f.). Type :- 'M'.

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS to 4. GENERAL

Same as in expt. no. 58(SFT) type B on page 106 conducted at Bhagalpur.

5. RESULTS :

Treatment	0	n_1'	n_2'	n_1'''	n_2'''
Av. yield	1851	2444	2806	2370	2567

G.M. = 2408 lb./ac. ; S.E./mean = 93.7 lb./ac. and no. of trials = 13.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 59(SFT).**

Centre :- Gaya (c.f.). Type :- 'M'.

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Alluvial. (iii) N.A. (iv) August. (v) (a) Ploughings and planking. (b) Transplanting. (c) —. (d) and (e) N.A. (vi) N.A. (vii) Some trials are irrigated while some are unirrigated. (viii) Weedings. (ix) N.A. (x) December 1959—January 1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type B on page 107 conducted at Bhagalpur.

5. RESULTS :

Treatment	0	n_1'	n_2'	n_1''	n_2''	n_1'''	n_2'''
Av. yield	1736	2049	2320	2049	2337	2065	2213

G.M. = 2110 lb./ac. ; S.E./mean = 56.4 lb./ac. and no. of trials = 16.

Crop :- Paddy (*Kharif*). Ref :- Bh. 58(SFT).

Centre :- Hazaribagh (c.f.). Type :- 'M'.

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red soil. (iii) N.A (iv) July-August. (v) (a) Ploughings. (b) Transplanting. (c) —. (d) and (e) N.A. (vi) to (ix) N.A. (x) November-December.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type B on page 106 conducted at Bhagalpur.

5. RESULTS :

Treatment	0	n_1'	n_2'	n_1'''	n_2'''
Av. yield	1473	1950	2592	2049	2469

G.M. = 2107 lb./ac. ; S.E./mean = 48.9 lb./ac. and no. of trials = 15.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 59(SFT).**

Centre :- Hazaribagh (c.f.). **Type :- 'M'.**

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red. (iii) Nil. (iv) July—August. (v) (a) 4 to 7 ploughings. (b) Transplanting. (c) —. (d) and (e) N.A. (vi) N.A. (vii) Unirrigated. (viii) Nil. (ix) N.A. (x) November—December.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type B on page 107 conducted at Bhagalpur.

5. RESULTS :

Treatment	0	n_1'	n_2'	n_1''	n_2''	n_1'''	n_2'''
Av. yield	1004	1325	1851	1399	1802	1341	1621

G.M. = 1478 lb./ac. ; S.E./mean = 611 lb./ac. and no. of trials = 12.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 58(SFT).**

Centre :- Monghyr (c.f.). **Type :- 'M'.**

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 58(SFT) Type B on page 106 conducted at Bhagalpur.

5. RESULTS :

Treatment	0	n_1'	n_2'	n_1'''	n_2'''
Av. yield	1687	1843	1753	1753	1769

G.M. = 1761 lb./ac. ; S.E./mean = 57.0 lb./ac. and no. of trials = 14.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 59(SFT).**

Centre :- Monghyr (c.f.). **Type :- 'M'.**

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Alluvial. (iii) N.A. (iv) August. (v) (a) 4 to 9 ploughings and planking. (b) Transplanting. (c) —. (d) and (e) N.A. (vi) and (vii) N.A. (viii) Weeding. (ix) N.A. (x) November—December.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type B on page 107 conducted at Bhagalpur.

5. RESULTS :

Treatment	0	n_1'	n_2'	n_1''	n_2''	n_1'''	n_2'''
Av. yield	1226	1580	1950	1539	1958	1539	1835

G.M. = 1661 lb./ac. ; S.E./mean = 40.7 lb./ac. and no. of trials = 16.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 58(SFT).**

Centre :- Muzaffarpur (c.f.). Type :- 'M'.

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 58(SFT) type B on page 106 conducted at Bhagalpur.

5. RESULTS :

Treatment	0	n_1'	n_2'	n_1'''	n_2'''
Av. yield	1744	2197	2608	2032	2345

G.M. = 2185 lb./ac. S.E. = 61.7 lb./ac. and no. of trials = 15.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 59(SFT).**

Centre :- Muzaffarpur (c.f.). Type :- 'M'.

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Alluvial. (iii) N.A. (iv) August. (v) (a) 4 to 6 ploughings and planking. (b) Transplanting. (c) —. (d) and (e) N.A. (vi) N.A. (vii) Unirrigated except trials. (viii) Weeding. (ix) N.A. (x) December.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type B on page 107 conducted at Bhagalpur.

5. RESULTS :

Treatment	0	n_1'	n_2'	n_1''	n_2''	n_1'''	n_2'''
Av. yield	963	1341	1637	1119	1317	1218	1407

G.M. = 1286 lb./ac. ; S.E./mean = 46.5 lb./ac. and no. of trials = 14.

Crop :- Paddy *(Kharif)*. **Ref. :- Bh. 58(SFT).**

Centre :- Patna (c.f.). Type :- 'M'.

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Other alluvial. (iii) N.A, (iv) August-September. (v) (a) Ploughings. (b) Transplanting. (c) —. (d) and (e) N.A. (vi) to (ix) N.A. (x) November-December.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type B on page 106 conducted at Bhagalpur.

5. RESULTS :

Treatment	0	n_1'	n_2'	n_1'''	n_2'''
Av. yield	1555	2024	2279	1942	2164

G.M. = 1993 lb./ac. ; S.E./mean = 66.3 lb./ac. and no. of trials = 12.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 59(SFT).**

Centre :- Patna (c.f.). **Type :- 'M'.**

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Other alluvial. (iii) Nil. (iv) August-September. (v) (a) 4 to 5 ploughings. (b) Transplanting. (c) —. (d) and (e) N.A. (vi) N.A. (vii) Irrigated. (viii) Weeding. (ix) N.A. (x) November-December.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type B on page 107 conducted at Bhagalpur.

5. RESULTS :

Treatment	0	n_1'	n_2'	n_1''	n_2''	n_1'''	n_2'''
Av. yield	1679	2041	2411	2148	2592	2041	2312

G.M. = 2175 lb./ac. ; S.E./mean = 75.6 lb./ac. and no. of trials = 9.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 59(SFT).**

Centre :- Purnea (c.f.). **Type :- 'M'.**

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Other alluvial. (iii) N.A. (iv) August-September. (v) (a) 4 to 6 ploughings and planking. (b) Transplanting. (c) —. (d) and (e) N.A. (vi) August-September. (vii) Some trials are irrigated while some are unirrigated. (viii) Weedings. (ix) N.A. (x) November-December.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type B on page 107 conducted at Bhagalpur.

5. RESULTS :

Treatment	0	n_1'	n_2'	n_1''	n_2''	n_1'''	n_2'''
Av. yield	1086	1218	1374	1193	1317	1168	1300

G.M. = 1237 lb./ac. ; S.E./mean = 13.4 lb./ac. and no. trials = 12.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 58(SFT).**

Centre :- Ranchi (c.f.). **Type :- 'M'.**

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red soil. (iii) N.A. (iv) July-August. (v) (a) Ploughings. (b) Transplanting. (c) —. (d) and (e) N.A. (v) to (ix) N.A. (x) November-December.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type B on page 106 conducted at Bhagalpur.

5. RESULTS :

Treatment	0	n_1'	n_2'	n_1'''	n_5'''
Av. yield	1012	1531	1827	1465	1687

G.M. = 1504 lb./ac. ; S.E./mean = 34.9 lb./ac. and no. of trials = 13.

Crop :- Paddy (*Kharif*). **Ref :- Bh. 59(SFT).**

Centre :- Ranchi (c.f.). **Type :- 'M'.**

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red. (iii) N.A. (iv) July-August. (v) (a) 4 to 8 ploughings. (b) Transplanting. (c) —. (d) and (e) N.A. (vi) N.A. (vii) Some trials are irrigated while some are unirrigated. (viii) Weedings. (ix) N.A. (x) November-December.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type B on page 107 conducted at Bhagalpur.

5. RESULTS :

Treatments	0	n_1'	n_2'	n_1''	n_2''	n_1'''	n_2'''
Av. yield	1053	1473	1901	1382	1761	1317	1876

G.M. = 1538 lb./ac. ; S.E./mean = 39.6 lb./ac. and no. of trials = 14.

Crop :- Paddy (*Kharif*). **Ref :- Bh. 59(SFT).**

Centre :- Santhal Paraganas (c.f.). **Type :- 'M'.**

Object :—Type B—To investigate the relative effiiciency of different nitrogenous fertilzers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red. (iii) N.A. (iv) August-September. (v) (a) 4 to 10 ploughings and planting. (b) Transplanting. (c) —. (d) and (e) N.A. (vi) N.A. (vii) Some trials are irrigated while some are unirrigated. (viii) Nil. (ix) N.A. (x) December, 1959.

2. TREATMENTS to 4. GENERAL

Same as in expt. no. 59(SFT) type B on page 107 conducted at Bhagalpur.

5. RESULTS :

Treatment	0	n_1'	n_2'	n_1''	n_2''	n_1'''	n_2'''
Av. yield	2024	2485	2781	2658	3028	2403	2534

G.M. = 2559 lb./ac. ; S.E./mean = 41.3 lb /ac. and no. of trials = 16.

Crop :- Paddy (*Kharif*). **Ref :- Bh. 59(SFT).**

Centre :- Shahabad (c.f.). **Type :- 'M'.**

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Alluvial. (iii) Nil. (iv) May, August-September (transplanting). (v) (a) 4 to 8 ploughings. (b) Transplanting. (c) —. (d) and (e) N.A. (vi) N.A. (vii) Some trials are irrigated while some are unirrigated. (viii) Nil. (ix) N.A. (x) November—December.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type B on page 107 conducted at Bhagalpur.

5. RESULTS ;

Treatment	0	n_1'	n_2'	n_1''	n_2''	n_1'''	n_2'''
Av. yield	1736	2213	2576	2123	2683	2263	2534

G.M. = 2304 lb./ac. ; S.E./mean = 53.5 lb./ac. and no. of trials = 16.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 55(68).**

Centre :- Kasba (Purnea, c.f.). **Type :- 'M'.**

Object :—To study the effect of growing different G.M. crops and applying them as manure to the Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Wheat. (c) Nil. (ii) Sandy loam. (iii) As per treatments. (iv) 498—2 A. (v) (a) N.A. (b) Transplanted by Japanese method. (c) N.A. (d) 10″×10″. (e) 2 to 3. (vi) N.A./23, 24.8.1955. (vii) Unirrigated. (viii) 3 weedings. (ix) 77.95″. (x) 8.12.1955.

2. TREATMENTS :

4 G.M. crops preceding paddy : G_0=Fallow (control), G_1=*Dhaincha*, G_2=*Kalai* and G_3=*Mung*.

3. DESIGN :

(i) and (ii) R.B.D. with 5 replications. (iii) (a) and (b) 72′×15′. (iv) Yes.

4. GENERAL :

(i) Good. (ii) Attack of stem-borer and leaf-spot ; slight attack of rice *gundli* bug was also there—no control measures were taken. (iii) Tiller count and yield of grain and straw. (iv) (a) 1955—contd. (b) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1211 lb./ac. (ii) 76.9 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	G_0	G_1	G_2	G_3
Av. yield	1120	1510	1278	937

S.E./mean = 34.4 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 55(66).**

Centre :- Katihar (Purnea, c.f.). **Type :- 'M'.**

Object :—To study the effect of growing different G.M. crops and applying them as manure to the Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) Nil. (ii) Clayey. (iii) As per treatments. (iv) 498—2A (late). (v) (a) 3 ploughings. (b) Transplanting. (e) 10 srs./ac. (d) 10″×10″. (e) 2 to 3. (vi) N.A./16, 17.8.1955. (vii) Unirrigated. (viii) Nil. (ix) 73.95″. (x) 14, 15.12.1955.

2. TREATMENTS and 3. DESIGN

Same as in expt. no. 55(68) above.

4. GENERAL :

(i) Good. (ii) Attack of case-worm (*Nymphula depunctalia*) was noted—controlled by spray of DDT 50%. (iii) Yield of grain and straw. (iv) (a) and (b) No. (v) to (vii) Nil.

5. RESULTS:

(i) 1051 lb./ac. (ii) 47.4 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	G_0	G_1	G_2	G_3
Av. yield	979	1153	1079	996

S.E./mean = 21.2 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 55(40)**

Centre :- Dumka (Santhal Paraganas, c.f.). **Type :- 'M'.**

Object :—To study the effect of growing different green manure crops and applying them as manure to the succeeding Paddy crop.

1. BASAL CONDITIONS :

(i) (a) and (b) As per treatments. (c) Nil. (ii) Sandy loam (acidic). (iii) As per treatments. (v) 498—2A (late). (v) (a) 3 ploughings by *desi* plough. (b) Transplanting. (c) 10 srs./ac. (d) 10″×10″. (e) N.A. (vi) 14.6.1955/2.8.1955. (vii) Unirrigated. (viii) Weeding. (ix) 33.57″. (x) 20.12.1955.

2. TREATMENTS :

Same as in expt. no. 55(68) on page 113.

3. DESIGN :

(i) and (ii) R.B.D. with 5 replications. (iii) (a) 38′×32′. (b) 36′×30′. (iv) Yes.

4. GENERAL :

(i) Average. (ii) The crop was dusted against the *gundli* bug at the right time. (iii) Germination, general flowering yield of grain and straw. (iv) (a) No. (b) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1078 lb./ac. (ii) 243.3 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	G_0	G_1	G_2	G_3
Av. yield	979	1178	1145	1012

S.E./mean = 108.8 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 55(90).**

Centre :- Bikramganj (Shahabad, c.f.). **Type :- 'M'.**

Object :—To study the effect of growing different G.M. crops and applying them as manure to the succeeding Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Wheat. (c) Nil. (ii) Sandy loam. (iii) Nil. (iv) 498—2A. (v) (a) 1 ploughing at the time of burying G.M. crop and two at the time of puddling. (b) Japanese method of Paddy transplanting. (c) 10 srs./ac. (d) 10″×10″. (e) N.A. (vi) 4.7.1955/23, 24.8.1955. (vii) Irrigated. (viii) Hoeing and weeding. (ix) 35″. (x) 8, 9.12.1955.

2. TREATMENTS :

Same as in expt. no. 55(68) on page 113.

3. DESIGNS :

(i) and (ii) R.B.D. with 10 replications. (iii) (a) 72′×15′. (b) 70.5′×13.5′. (iv) Yes.

4. GENERAL :

(i) Good. (ii) Attack of case-worm, water drained out and again watered. (iii) Tiller counting and yield of straw and grain. (iv) (a) and (b) No. (v) to (vii) Nil.

5. RESULTS :

(i) 2270 lb./ac. (ii) 338.7 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	G_0	G_1	G_2	G_3
Av. yield	2183	2352	2279	2265

S.E./mean = 107.1 lb./ac.

Crop :- Paddy ***(Kharif).*** **Ref :- Bh. 58 (256).**

Centre :- Bikramganj (Shahabad, c.f.). **Type :- 'M'.**

Object :—To study the effect of growing different G.M. crops and applying them as manure to the succeeding Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) N.A. (iii) Nil. (iv) BR—36. (v) (a) 4 ploughings. (b) Japanese method. (c) 10 srs./ac. (d) 10″×10″. (e) N.A. (vi) N.A./15.8.1958. (vii) Unirrigated. (viii) N.A. (ix) 19.34″. (x) 5.12.1958.

2. TREATMENTS :

5 G.M. crops : G_0=Fallow (control), G_1=*Dhaincha*, G_2=*Kalai*, G_3=*Moong* and G_4=*Sanai.*

3. DESIGN :

(i) and (ii) R.B.D. with 4 replications. (iii) (a) N.A. (b) 75′×16½′. (iv) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Grain yield. (iv) (a) 1958—1959. (b) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2170 lb./ac. (ii) N.A. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	G_0	G_1	G_2	G_3	G_4
Av. yield	2147	2244	2094	2138	2226

S.E./mean = N.A.

Crop :- Paddy ***(Kharif).*** **Ref :- Bh. 59(180).**

Centre :- Bikramganj (Shahabad, c.f.). **Type :- 'M'.**

Object :—To study the effect of growing different G.M. crops and applying them as manure to the succeeding Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) N.A. (iii) Nil. (iv) BK—36. (v) (a) 4 ploughings. (b) Japanese method. (c) 10 srs./ac. (d) 10″×10″. (e) 2 to 3. (vi) N.A./14, 15.8.1959. (vii) Unirrigated. (viii) N.A. (ix) 20.13″. (x) 4.12.1959.

2. TREATMENTS :

Same as in expt. no. 58(256) above.

3. DESIGN :

(i) and (ii) R.B.D. with 5 replications. (iii) (a) 34½′×23′. (b) 33′×22′. (iv) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Grain yield. (iv) (a) 1958—1959. (b) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 3038 lb./ac. (b) 131·4 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	G_0	G_1	G_2	G_3	G_4
Av. yield	2688	3108	3264	3288	2844

S.E./mean = 58.8 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 57(225).**

Site :- Bikramganj (Shahabad, c.f.). **Type :- 'M'.**

Object :—To test the effect of gypsum on Paddy yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) Clayey. (iii) Nil. (iv) Local. (v) (a) to (e) Japanese method. (vi) N.A./17.8.1957. (vii) Irrigated. (viii) N.A. (ix) 7.86". (x) N.A.

2. TREATMENTS :

5 manurial treatments : M_0=Control, M_1=40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super, M_2=2½ mds./ac. of gypsum, M_3=5 mds./ac. of gysum and $M_4=M_1+M_3$.

3. DESIGN :

(i) and (ii) R.B.D. with 4 replications. (iii) (a) N.A. (b) 1/20 ac. (iv) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Grain yield. (iv) (a) 1957—1959. (b) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 2696 lb./ac. (ii) 271.2 lb./ac. (iii) Treatment differences are not sigaificant. (iv) Av. yield of grain in lb./ac

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	2500	2930	2545	2810	2695

S.E./mean = 135.6 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 58(257).**

Site :- Bikramganj (Shahabad, c.f.). **Type :- 'M'.**

Object :—To test the effect of gypsum on Paddy yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) Clayey. (iii) Nil. (iv) Local. (v) (a) to (c) Japanese method. (vi) N.A./25.7.1958. (vii) Irrigated. (viii) N.A. (ix) 29.29". (x) 22.11.1958.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 57(225) as above.

5. RESULTS :

(i) 2791 lb./ac. (ii) 166.4 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	2625	3125	2610	2570	3025

S.E./mean = 83.2 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 59(181).**

Site :- :- Bikramganj (Shahabad, c.f.). **Type :- 'M'.**

Object :—To test the effect of gypsum on Paddy yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) Clayey. (iii) Nil. (iv) Local. (v) (a) to (e) Japanese method. (vi) N.A./7.8.1959. (vii) Irrigated. (viii) N.A. (ix) 22.43". (x) 14.12.1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 57(225) on page 116.

5. RESULTS :

(i) 2407 lb./ac. (ii) 201.2 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment :	M_0	M_1	M_2	M_3	M_4
Av. yield	2010	2750	2140	2385	2750

S.E./mean = 100.6 lb./ac.

EXPERIMENTS CONDUCTED BY THE FIELD EXPERIMENTAL SPECIALIST ON PADDY

Object :—To find out manurial schedules for Paddy crop for various tracts of Bihar.

ZONE 1.

TREATMENTS :

All combinations of (1), (2) and (3)

(1) 3 levels of N as A/S : $N_1=0$, $N_1=25$ and $N_2=50$ lb./ac.

(2) 3 levels of P_2O_5 as Super : $P_0=0$, $P_1=30$ and $P_2=60$ lb./ac.

(3) 3 levels of K_2O as Mur. Pot. : $K_0=0$, $K_1=25$ and $K_2=50$ lb./ac.

I. IRRIGATED TRIALS.

Serial no. : 1. **Block (Dist.) :** Gaya Mufassil (Gaya). **Soil type :** Clayey.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	1227	311	196	757	143	103

Serial no. : 2. **Block (Dist.) :** Wazirganj (Gaya). **Soil type :** Clayey.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	587	337	128	225	14o	25

Serial no. : 3. **Block (Dist.) :** Tekari (Gaya). **Soil type :** Clayey.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	513	248	56	431	96	6

Serial no. : 4. **Block (Dist.) :** Jahanabad (Gaya). **Soil type :** Sandy loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	564	243	70	339	95	17

Serial no. : 5. **Block (Dist.) :** Ghosi (Gaya). **Soil type :** Sandy loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	459	216	78	492	125	21

Serial no. : 6. **Block (Dist.) :** Makdumpur (Gaya). **Soil type :** Sandy loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	472	81	105	432	—3	−30

Serial no. : 7. **Block (Dist.) :** Arwal (Gaya). **Soil type :** Sandy clay.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	457	212	93	378	179	13

Serial no. : 8. **Block (Dist.) :** Phulwari (Patna). **Soil type :** Loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	700	521	165	303	254	44

Serial no. : 9. **Block (Dist.) :** Masauri (Patna). **Soil type :** Clay loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	641	523	143	277	24	37

Serial no. : 10. **Block (Dist.) :** Danapore (Patna). **Soil type :** Loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	370	277	87	230	—13	7

Serial no. : 11. **Block (Dist.) :** Bikram (Patna). **Soil type :** Clayey.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	448	391	44	304	220	41

Serial no. : 12. **Block (Dist.) :** Paliganj (Patna). **Soil type :** Clayey loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	357	170	162	202	34	66

Serial no. : 13. **Block (Dist.) :** Naubatpur (Patna). **Soil type :** Clayey loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	540	335	82	258	222	129

Serial no. : 14. **Block (Dist.) :** Maner (Patna). **Soil type :** Loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	571	38	36	309	—25	34

Serial no. : 15. **Block (Dist.) :** Bihat (Patna). **Soil type :** Loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	403	93	59	341	55	36

Serial no. : 16. **Block (Dist.) :** Barh (Patna). **Soil type :** Loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	273	313	97	74	112	—20

Serial no. : 17. **Block (Dist.) :** Bakhtiyarpur (Patna). **Soil type :** Clay loa

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	388	271	57	194	160	11

Serial no. : 18. **Block (Dist.) :** Fatuwah (Patna). **Soil type :** Clay loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	645	380	179	192	134	5

Serial no. : 19. **Block (Dist.) :** Bihar sharif (Patna). **Soil type :** Clayey loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	467	193	76	109	23	6

Serial no. : 20. **Block (Dist.) :** Asthawan (Patna). **Soil type :** Clayey loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	358	246	62	48	11	—2

Serial no. : 21. **Block (Dist.) :** Giriak (Patna). **Soil type :** Clayey loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	529	188	80	219	68	—82

Serial no. : 22. **Block (Dist.) :** Ekangarsarai (Patna). **Soil type :** Sandy loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	504	219	32	−151	—10	7

Serial no. : 23. **Block (Dist.) :** Arrah Mufassil (Shahabad). **Soil type :** Loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	592	343	180	329	97	—8

Serial no. : 24. **Block (Dist.) :** Shahpur (Shahabad). **Soil type :** Sandy loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	582	502	154	234	139	—16

Serial no. : 25. **Block (Dist.) :** Piro (Shahabad). **Soil type :** Sandy loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean reasponse in lb./ac.	984	623	288	81	49	—98

Serial no. : 26. **Block (Dist.) :** Buxar (Shahabad). **Soil type :** Loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	411	94	47	118	37	70

Serial no. : 27. **Block (Dist.) :** Dumraon (Shahabad). **Soil type :** Loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	507	146	86	320	97	37

Serial no. : 28. **Block (Dist.) :** Nawanagar (Shahbad). **Soil type :** Clayey.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	528	297	124	319	148	50

II. UNIRRIGATED TRIALS.

Serial no. : 1. **Block (Dist.) :** Gaya Mufassil (Gaya). **Soil type :** Sandy clay.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	30	78	21	105	3	2

Serial no. : 2. **Block (Dist.) :** Belaganj (Gaya). **Soil type :** Sandy clay.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	494	185	—39	378	69	—108

Serial no. : 3. **Block (Dist.) :** Khizirsari (Gaya). **Soil type :** Sandy loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	564	223	35	327	80	—16

Serial no. : 4. **Block (Dist.) :** Sherghati (Gaya). **Soil type :** Sandy clay.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	311	352	132	131	61	—81

Serial no. : 5. **Block (Dist.) :** Jehanabad (Gaya). **Soil type :** Clayey loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	266	292	100	307	117	50

Serial no. : 6. **Block (Dist.) :** Tekari (Gaya). **Soil type :** Clayey loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	369	281	—33	428	81	79

Serial no. : 7. **Block (Dist.) :** Masauri (Patna). **Soil type :** Clayey loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	650	204	166	304	100	102

Serial no. : 8. **Block (Dist.) :** Naubatpur (Patna). **Soil type :** Clayey loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	596	356	78	136	101	—113

Serial no. : 9. **Block (Dist.) :** Barh (Patna). **Soil type :** Sandy loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	588	368	25	355	190	—26

Serial no. : 10. **Block (Dist.) :** Bakhtiyapur (Patna). **Soil type :** Clayey loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	459	411	41	234	185	19

Serial no. : 11. **Block (Dist.) :** Sarmera (Patna). **Soil type :** Clayey loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	778	723	71	563	18	—76

Serial no. : 12. **Block (Dist.) :** Silao (Patna). **Soil type :** Clayey loam.

RESULTS :

Treatment	n′	p′	k″	n″	p″	k″
Mean response in lb./ac.	423	355	271	138	—26	73

ZONE 2:

TREATMENTS :

All combinations of (1), (2) and (3)

(1) 3 levels of N as A/S : $N_0=0$, $N_1=20$ and $N_2=40$ lb./ac.

(2) 3 levels of P_2O_5 as Super : $P_0=0$, $P_1=25$ and $P_2=50$ lb./ac.

(3) 3 levels of K_2O as Mur. Pot. : $K_0=0$, $K_1=20$ and $K_2=40$ lb./ac.

I. IRRIGATED TRIALS.

Serial no. : 1. **Block (Dist.) :** Garhwa (Palamau). **Soil type :** Sandy loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	633	570	134	273	334	−39

Serial no. : 2. **Block (Dist.) :** Khunti (Ranchi) **Soil type :** Sandy loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	866	792	98	287	106	—29

Serial no. : 3. **Block (Dist.) :** Jarmundi (Santhal Paraganas). **Soil type :** Sandy clay.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	444	414	78	100	62	14

Serial no : 4. **Block (Dist). :** Godda (Santhal Paraganas).. **Soil type :** Sandy clay.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	691	599	131	248	373	—146

Serial no. : 5. **Block (Dist.) :** Jasidih (Santhal Paraganas). **Soil type :** Sandy clay.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	—72	2	28	—84	—57	96

Serial no. : 6. **Block (Dist.) :** Madhupur (Santhal Paraganas). **Soil type :** Sandy clay.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	526	295	72	394	98	—80

Serial no. : 7. **Block (Dist.) :** Chakradharpur (Singhbhum). **Soil type :** Sandy clay

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	1143	689	95	412	181	—22

Serial no. : 8. **Block (Dist.) :** Baharagora (Singhbhum). **Soil type :** Sandy clay

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	218	0	138	59	94	37

II. UNIRRIGATED TRIALS.

Serial no. : 1. **Block (Dist.) :** Chas (Dhanbad). **Soil type :** Sandy clay.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	1140	475	103	499	—18	—24

Serial no. : 2. **Block (Dist.) :** Gobindpur (Dhanbad). **Soil type :** Sandy loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	697	791	157	404	393	—25

Serial no. : 3. **Block (Dist.) :** Katras (Dhanbad). **Soil type :** Sandy clay.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	404	383	237	416	5	—116

Serial no. : 4. **Block (Dist.) :** Hazaribagh (Hazaribagh). **Soil type :** Clayey loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	582	513	168	330	325	43

Serial no. : 5. **Block (Dist.) :** Barkagaon (Hazaribagh). **Soil type :** Clayey loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	365	216	49	248	70	0

Serial no. : 6. **Block (Dist.) :** Bagodar (Hazaribagh). **Soil type :** Sandy clay.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	221	84	50	150	75	—43

Serial no. : 7. **Block (Dist.) :** Chanpura (Hazaribagh). **Soil type :** Sandy clay.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	294	252	95	125	103	38

Serial no. : 8. **Block (Dist.) :** Itkhori (Hazaribagh). **Soil type :** Sandy clay.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean rerponse in lb./ac.	306	141	103	138	19	2

Serial no. : 9. **Block (Dist.) :** Chatra (Hazaribagh). **Soil type :** Sandy clay.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	299	235	93	142	45	38

Serial no. : 10. **Block (Dist.) :** Giridih (Hazaribagh). **Soil type :** Sandy clay.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	183	295	189	17	—90	—33

Serial no. : 11. **Block (Dist.) :** Bangabad (Hazaribagh). **Soil type :** Sandy loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	232	292	190	79	52	89

Serial no. : 12. **Block (Dist.) :** Dumri (Hazaribagh). **Soil type :** Sandy clay.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	630	205	29	380	76	19

Serial no. : 13. **Block (Dist.) :** Jamua (Hazaribagh). **Soil type :** Sandy clay.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	490	360	238	—91	178	—13

Serial no. : 14. **Block (Dist.) :** Lesliganj (Palamau). **Soil type :** Sandy loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	578	328	119	107	99	39

Serial no. : 15. **Block (Dist.) :** Mantu (Palamau). **Soil type :** Sandy loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	238	307	126	106	80	84

Serial no. : 16. **Block (Dist.) :** Latehar (Palamau). **Soil type :** Sandy loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	575	305	135	357	141	—27

Serial no. : 17. **Block (Dist.) :** Balumath (Palamau). **Soil type :** Loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	234	237	142	233	—9	91

Serial no. : 18. **Block (Dist.) :** Chandwa (Palamau). **Soil type :** Clay loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	512	365	182	272	195	73

Serial no. : 19. **Block (Dist.) :** Ranchi Sadar (Ranchi). **Soil type :** Sandy loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	289	194	58	214	118	13

Serial no. : 20. **Block (Dist.) :** Ormanjhi (Ranchi). **Soil type :** Sandy loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	696	456	61	398	417	3

Serial no. : 21. **Block (Dist.) :** Mander (Ranchi). **Soil type :** Sandy loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	371	225	40	295	168	—24

Serial no. : 22. **Block (Dist.) :** Lohardega (Ranchi). **Soil type :** Clayey loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	402	436	80	387	99	54

Serial no. : 23. **Block (Dist.) :** Khunti (Ranchi). **Soil type :** Sandy clay.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	764	400	28	253	100	29

Serial no. : 24. **Block (Dist.) :** Bundu (Ranchi). **Soil type :** Sandy clay.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	1715	566	127	1151	390	65

Serial no. : 25. **Block (Dist.) :** Karra (Ranchi). **Soil type :** Sandy loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	1632	866	536	109	—37	175

Serial no. : 26. **Block (Dist.) :** Gumla (Ranchi). **Soil type :** Sandy loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	318	267	104	101	92	—10

Serial no. : 27. **Block (Dist.) :** Raidih (Ranchi). **Soil type :** Sandy loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	675	703	147	160	309	85

Serial no. : 28. **Block (Dist.) :** Ghaghra (Ranchi). **Soil type :** Sandy clay.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	546	132	129	492	—97	—118

Serial no. : 29. **Block (Dist.) :** Kolebira (Ranchi). **Soil type :** Sandy clay.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	439	479	214	256	264	—27

Serial no. : 30. **Block (Dist.) :** Simdega (Ranchi). **Soil type :** Sandy clay.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	239	254	212	270	251	59

Serial no. : 31. **Block (Dist.) :** Thethaitanagar (Ranchi). **Soil type :** Sandy loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	214	324	119	136	203	75

Serial no. : 32. **Block (Dist.) :** Dumka Mufassil (Santhal Paraganas). **Soil Type :** **Sandy clay.**

RESULTS :

Treatment :	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	580	285	162	265	21	—5

Serial no. : 33. **Block (Dist.) :** Saraiyahat (Santhal Paraganas). **Soil type :** Sandy clay.

RESULTS :

Treatment :	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	659	388	208	397	122	75

Serial no. : 34. **Block (Dist.) :** Jarmundi (Santhal Paraganas). **Soil type :** Sandy clay.

RESULTS :

Treatment :	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	387	285	119	151	108	15

Serial no. : 35. **Block (Dist.) :** Jamtara (Santhal Paraganas). **Soil type :** Sandy clay.

RESULTS :

Treatment	n′	p′	k,	n″	p″	k″
Mean response in lb./ac.	787	702	302	403	309	25

Serial no. : 36. **Block (Dist.) :** Nala (Santhal Paraganas). **Soil type :** Sandy clay.

RESULTS :

Treatment :	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	197	202	106	66	134	76

Serial no. : 37. **Block (Dist.) :** Pakur (Santhal Paraganas). **Soil type :** Sandy clay.

RESULTS :

Treatment :	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	815	364	149	70	145	14

Serial no. : 38. **Block (Dist.) :** Maheshpur (santhal Paraganas). **Soil type :** Sandy clay.

RESULTS :

Treatment :	n′	p′	k′	d″	p″	k″
Mean response in lb./ac.	676	272	123	177	66	—2

Serial no. : 39. **Block (Dist.) :** Sahebganj (Santhal Paraganas). **Soil type :** Sandy loam.

RESULTS :

Treatment :	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	672	396	194	429	—54	67

Serial no. : 40. **Block (Dist.) : Barharwa (Santhal Paraganas).** **Soil type : Clayey loam.**

RESULTS

Treatment :	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	894	588	185	537	230	8

Serial no. : 41. **Block (Dist.) : Godda (Santhal Paraganas).** **Soil type : Sandy clay.**

RESULTS :

Treatment :	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	796	426	300	584	135	22

Serial no. : 42. Block (Dist.) : Mahagaon (Santhal Pareganas). Soil type : Sandy clay.

RESULTS :

Treatment :	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	495	402	227	118	111	100

Serial no. : 43. Block (Dist.) : Paraiyahat (Santhal Paraganas). Soil type : Sandy clay.

RESULTS :

Treatment :	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	244	307	80	226	—18	—51

Serial no. : 44. Block (Dist.) : Sarath (Santhal Paraganas). Soil type : Sandy clay.

RESULTS :

Treatment :	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	552	355	158	276	164	—8

Serial no. : 45. Block (Dist.) : Boreo (Santhal Paraganas). Soil type : Clayey loam.

RESULTS

Treatment :	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	415	370	159	269	207	47

Serial no. : 46. Block (Dist.) : Jhinkpani (Singhbhum). Soil type : Sandy clay.

RESULTS :

Treatment :	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	686	614	103	132	377	—27

Serial no. : 47. Block (Dist.) : Nawamundi (Singhbhum). Soil type : Sandy loam.

RESULTS :

Treatment :	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	573	413	64	562	389	20

Serial no. : 48. **Block (Dist.) :** Seraikela (Singhbhum). **Soil type :** Sandy loam.

RESULTS :

Treatment :	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	708	573	11	137	15	57

Serial no. : 49. **Block (Dist.) :** Kharsawan (Singhbhum). **Soil type :** Sandy loam.

RESULTS :

Treatment :	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	431	509	168	138	80	13

Serial no. : 50. **Block (Dist.) :** Potka (Singhbhum). **Soil type :** Sandy clay.

RESULTS :

Treatment :	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	471	913	292	202	428	62

ZONE 3.

TREATMENTS :

All combinations of (1), (2) and (3)

(1) 3 levels of N as A/S : $N_0=0$, $N_1=30$ and $N_2=60$ lb./ac.
(2) 3 levels of P_2O_5 as Super : $P_0=0$, $P_1=30$ and $P_2=60$ lb./ac.
(3) 3 levels of K_2O as Mur. Pot. : $K_0=0$, $K_1=20$ and $K_2=40$ lb./ac.

I. IRRIGATED TRIALS

Serial no. : 1. **Block (Dist.) :** Sugauli (Champaran). **Soil type :** Clayey loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	415	450	52	95	261	36

Serial no. : 2. **Block (Dist.) :** Majhaulia (Champaran). **Soil type :** Clayey loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	404	336	48	21	111	32

Serial no. : 3. **Block (Dist.) :** Bagaha (Champaran). **Soil type :** Clayey loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	238	211	16	15	245	69

Serial no. 4. **Block (Dist.) :** Sikarpur (Champaran). **Soil type :** Clayey loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	435	420	116	15	133	37

Serial no. : 5. **Block (Dist.) :** Ramnagar (Champaran). **Soil type :** Clay loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	676	249	156	724	432	30

Serial no. : 6. **Block (Dist.) :** Bahera (Darbhanga). **Soil type :** Sandy loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	320	147	39	290	86	73

Serial no. : 7. **lock (Dist.) :** Lalganj (Muzaffarpur). **Soil type :** Sandy loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	389	307	14	228	135	4

Serial no. : 8. **Block (Dist.) :** Manjhi (Saran). **Soil type :** Clay.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	380	319	60	247	171	50

Serial no. : 9. **Block (Dist.) :** Ekma (Saran). **Soil type :** Clay loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	486	324	38	286	181	—25

Serial no. : 10. **Block (Dist.) :** Siwan (Saran). **Soil type :** Clay loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	434	262	68	546	111	66

Serial no. : 11. **Block (Dist.) :** Basantpur (Saran). **Soil type :** Clay loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	425	125	28	405	67	37

Serial no. : 12. **Block (Dist.) :** Gopalganj (Saran). **Soil type :** Sandy loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	461	245	95	258	86	—39

Serial no. : 13. **Block (Dist.) :** Mirganj (Saran). **Soil type :** Sandy loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	469	247	88	295	31	—12

II. UNIRRIGATED TRIALS

Serial no. : 1. **Block** (Dist.) : Motihari Muffasil (Champaran). **Soil type :** Sandy clay.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	649	644	313	281	180	71

Serial no. : 2. **Block** (Dist.) : Kesaria (Champaran). **Soil type :** Loam.

RESULTS

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	386	189	91	156	143	—20

Serial no. : 3. **Block** (Dist.) : Pipra (Champaran). **Soil type :** Loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	284	113	87	144	13	24

Serial no. : 4. **Block** (Dist.) : Gobindganj (Champaran). **Soil type :** Loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	392	341	114	302	147	—32

Serial no. : 5. **Block** (Dist.) Sugauli (Champaran). **Soil type :** Clayey loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	248	186	46	—7	7	76

Serial no. : 6. **Block** (Dist.) : Nautan (Champaran). **Soil type :** Clayey loan.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	568	141	6	192	81	48

Serial no. : 7. **Block (Dist.) :** Dhanaha (Champaran). **Soil type :** Clayey loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	271	234	30	165	91	65

Serial no. : 8. **Block (Dist.) :** Sikarpur (Champaran). **Soil type :** Loam.

RESULTS :

Treatment	n′	d′	k′	n″	p″	k″
Mean response in lb./ac.	398	344	62	175	95	28

Serial no. : 9. **Block (Dist.) :** Darbhanga Sadar (Darbhanga). **Soil type :** Clayey.

RESULTS

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	215	202	61	147	105	30

Serial no. : 10. **Block (Dist.) :** Bahera (Darbhanga). **Soil type :** Clayey loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	365	351	37	179	178	58

Serial no. : 11. **Block (Dist.) :** Samastipur (Darbhanga). **Soil type :** Clayey loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	432	318	90	253	178	12

Serial no. : 12. **Block (Dist.) :** Tajpur (Darbhanga). **Soil type :** Loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	586	238	178	388	103	0

Serial no. : 13. **Block (Dist.) :** Warisnagar (Darbhanga). **Soil type :** Loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
ean response in lb./ac.	469	286	115	261	123	25

Serial no. : 14. **Block (Dist.) :** Dalsingsarai (Darbhanga). **Soil type :** Sandy clay.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	383	165	—7	262	115	11

Serial no. : 15. **Block (Dist.) :** Benipatti (Darbhanga). **Soil type :** Clayey loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	218	98	53	88	—14	—42

Serial no. : 16. **Block (Dist.) :** Khajouli (Darbhanga). **Soil type :** Loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	515	318	154	308	95	17

Serial no. : 17. **Block (Dist.) :** Muzaffarpur Sadar (Muzaffarpur). **Soil type :** Loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	555	481	181	387	97	57

Serial no. : 18. **Block (Dist.) :** Paru (Muzaffarpur). **Soil type :** Loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	363	300	71	259	146	−11

Serial no. : 19. **Block (Dist.) :** Baruraj (Muzaffarpur). **Soil type :** Loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	256	298	126	113	93	−19

Serial no. : 20. **Block (Dist.) :** Sitamarhi (Muzaffarpur). **Soil type :** Sandy loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	594	325	96	700	380	38

Serial no. : 21. **Block (Dist.) :** Bela (Muzaffarpur). **Soil type :** Clayey loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	617	400	24	408	214	70

Serial no. : 22. **Block (Dist.) :** Bargainia (Muzaffarpur). **Soil type :** Sandy loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	123	146	36	125	106	12

Serial no. : 23. **Block (Dist.) :** Runisaidpur (Muzaffarpur). **Soil type :** Clayey loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	145	124	—3	126	—17	—28

Serial no. : 24. **Block (Dist.) :** Pupri (Muzaffarpur). **Soil type :** Clayey loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	318	371	182	53	—34	36

Serial no. : 25. **Block (Dist.) :** Sursan (Muzaffarpur). **Soil type :** Clayey loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	182	195	48	197	78	—86

Serial no. : 26. **Block (Dist.) :** Hajipur (Muzaffarpur). **Soil type :** Sandy loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	312	381	107	190	157	—36

Serial no. : 27. **Block (Dist.) :** Lalganj (Muzaffarpur). **Soil type :** Sandy loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	361	235	40	240	142	47

Serial no. : 28. **Block (Dist.) :** Chapra Muffasil (Saran). **Soil type :** Clayey.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	319	414	—7	274	255	148

Serial no. : 29. **Block (Dist.) :** Beniapur (Saran). **Soil type :** Clayey.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	402	176	65	360	45	19

Serial no. : 30. **Block (Dist.) :** Dighwara (Saran). **Soil type :** Clayey loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	224	171	31	95	91	29

Serial no. : 31. **Block (Dist.) :** Siwan (Saran). **Soil type :** Clayey loam.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	461	91	34	299	49	10

Serial no. : 32. **Block (Dist.) :** Basantpur (Saran). **Soil type :** Clayey

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	325	129	4	199	23	—4

Serial no. : 33. **Block (Dist.) :** Maharajganj (Saran). **Soil type :** Clayey.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	310	93	39	231	84	31

Serial no. : 34. Block (Dist.) : Gopal ganj (Saran). Soil type : Clayey.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	580	378	169	263	102	83

Serial no. : 35. Block (Dist.) : Bhore (Saran). Soil type : Clayey.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	598	329	97	448	152	—7

Serial no. : 36. **Block (Dist.) :** Kuchaikot (Saran). **Soil type :** Clayey.

RESULTS :

Treatment	n′	p′	k′	n″	p″	k″
Mean response in lb./ac.	476	287	164	168	118	71

Crop :- Paddy. **Ref :- Bh. 54(39).**

Site :- Bot. Sub-Stn., Bikramganj. **Type :- 'MV'.**

Object :—To study the response of different varieties of Paddy to varying doses of N and P.

1. BASAL CONDITIONS :

(i) (a) Paddy—*Paira* gram—Paddy. (b) Gram. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Bikramganj. (iii) 4.7.1954/12, 13.8.1954. (iv) (a) 3 *desi* ploughings. (b) N.A. (c) 20 srs./ac. (d) 9″×9″. (e) 2 to 3. (v) Nil. (vi) As per treatments. (vii) Irrigat ed. (viii) Interculturing twice with Japanese weeder. (ix) 33.17″. (x) 30, 31.12.1954.

2. TREATMENTS :

Main-plot treatments :

2 varieties : V_1=BK—36 and V_2=498—2A.

Sub-plot treatments :

4 levels of P_2O_5 as Super : P_0=0, P_1=20, P_2=40 and P_3=60 lb./ac.

Sub-sub-plot treatments :

4 levels of N as A/S : N_0=0, N_1=40, N_2=60 and N_3=80 lb./ac.

Full dose of P and ½ dose of N broadcast at planting the remaining half N a month later.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication ; 4 sub-plots/main-plot and 4 sub-sub-plots/sub-plot. (b) N.A. (iii) 3. (iv) (a) 9′×15′. (b) 7½′×13½′. (v) One row alround the net plot. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Nil. (iii) Biometric observations and grain yield. (iv) (a) 1953—1954. (b) No. (c) Nil. (v) (a) Sabour, Dumka, Purnea, Patna and Kanke. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2841 lb./ac. (ii) (a) 284.8 lb./ac. (b) 459.9 lb./ac. (c) 412.1 lb./ac. (iii) N effect is highly significant and V effect is significant. No other effect or interaction is significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	P_3	Mean	N_0	N_1	N_2	N_3
V_1	3010	3222	3171	3014	3104	2964	3130	3300	3024
V_2	2429	2466	2729	2687	2578	2328	2710	2793	2480
Mean	2719	2844	2950	2851	2841	2646	2920	3047	2752
N_0	2424	2590	2962	2876					
N_1	2848	3024	2913	2895					
N_2	2968	2996	3263	2959					
N_3	2636	2766	2931	2673					

S.E. of difference of two

1. V marginal means = 58.1 lb./ac.
2. P marginal means = 132.8 lb./ac.
3. N marginal means = 118.9 lb./ac.
4. P means at the same level of V = 187.8 lb./ac.
5. V means at the same l evel of P = 172.6 lb./ac.
6. P means at the same level of N = 245.2 lb./ac.
7. N means at the same level of P = 238.0 lb./ac.
8. N means at the same level of V = 168.3 lb./ac.
9. V means at the same level of N = 156.6 lb./ac.

Crop :- Paddy. **Ref :- Bh. 54(21).**

Site :- Bot. Sub-Stn., Dumka. **Type :- 'MV'.**

Object :—To study the response of different varieties of Paddy to varying doses of N and P.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Sandy loam. (b) N.A. (iii) N.A./4, 5.8.1954. (iv) (a) 3 ploughings by *desi* plough. (b) N.A. (c) 10 lb./ac. (d) 9″×9″. (e) 3 to 4. (v) Nil. (vi) As per treatments. (vii) Unirrigated. (viii) N.A. (ix) 15.20″. (x) 9.12.1954.

2. TREATMENTS :

Same as in expt. no. 54(39) on page 136.

3. DESIGN :

(i) Split-plot. ,(ii) (a) 2 main-plots/block ; 4 sub-plots/main-piot and 4 snb-sub-plots/sub-plot. (b) N.A (iii) 3. (iv) (a) 12′10½″×8′6″. (b) 9′10½″×5′6″. (v) N.A. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Nil. (iii) Yield of grain. (iv) (a) 1953—1954. (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3220 lb./ac. (ii) (a) 1024 lb./ac. (b) 129 lb./ac. (c) 628.8 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	P_3	Mean	N_0	N_1	N_2	N_3
V_1	3205	3153	3360	3738	3364	3256	3317	3368	3514
V_2	3050	3136	2930	3188	3076	2982	2810	2990	3523
Mean	3128	3145	3145	3463	3220	3119	3063	3179	3519
N_0	2904	2973	3385	3214					
N_1	3007	2698	2784	3763					
N_2	3059	3214	3334	3110					
N_3	3540	3695	3076	3763					

S.E. of difference of two

1. V marginal means = 209.0 lb./ac.
2. P marginal means = 372.5 lb./ac.
3. N marginal means = 181.5 lb./ac.
4. P means at the same level of V = 526.9 lb./ac.
5. V means at the same level of P = 501.7 lb./ac.
6. P means at the same level of N = 487.5 lb./ac.
7. N means at the same level of P = 363.0 lb./ac.
8. N means at the same level of V = 256.7 lb./ac.
9. V means at the same level of N = 305.9 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 56(229).**

Site :- Bot. Sub-Stn., Bikramganj. **Type :- 'C'.**

Object :—To study the effect of growth periods of G.M. crop on yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) G.M. crop *dhaincha*. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Bikramganj. (iii) N.A./15, 16, 17.7.1956. (iv) (a) 3 ploughings. (b) Japanese method. (c) 8 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) Nil. (vi) FR—13. (vii) Unirrigated. (viii) 2 weedings. (ix) 31.80″. (x) 17, 18.12.1956.

2. TREATMENTS :

5 dates of sowing *dhaincha* : D_0=Control (no G.M.), D_1=3.5.1956, D_2=18.5.1956, D_3=2.6.1956 and D_4=17.6.1956.

3. DESIGN :

(i) R.B.D. (ii) 5. (b) N.A. (iii) 6. (iv) (a) 33′×22′. (b) 31′×20′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Grain and straw yield. (iv) (a) to (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 2180 lb./ac. (ii) 151.5 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	D_0	D_1	D_2	D_3	D_4
Av. yield	2326	1700	2179	2324	2371

S.E./mean = 61.8 lb./ac.

Crop :- Paddy. **Ref :- Bh. 54(36).**

Site :- Bot. Sub-Stn., Bikramganj. **Type :- 'C'.**

Object :—To find out the effect of age, no. of seedlings and spacings on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Wheat—Paddy. (b) Wheat. (c) 100 lb./ac. of A/S+100 lb./ac. of Super. (ii) (a)Sandy loam. (b) Refer soil analysis, Bikramganj. (iii) 22, 30.6.1954 and 7.7.1954/29.7.1954 and 1.8.1954. (iv) (a) 3 ploughings by *desi* plough. (b) N.A. (c) 20 srs./ac. (d) and (e) As per treatments. (v) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (vi) BK—115 (early). (vii) Irrigated. (viii) Hoeing and weeding. (ix) 36.72". (x) 8.12.1954.

2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 3 spacings : $S_1=6'' \times 6''$, $S_2=6'' \times 10''$ and $S_3=10'' \times 10''$.
(2) 3 ages of seedlings : $T_1=3$, $T_2=4$ and $T_3=5$ weeks old.
(3) No. of seedlings per hole : $L_1=2$, $L_2=4$ and $L_3=6$.

3. DESIGN :

(i) 3^3 confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) N.A. (iii) 2. (iv) (a) and (b) 15'×40'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Growth, flowering and yield of grain. (iv) (a) 1953—contd. (b) No. (c) Nil. (v) (a) Sabour, Kanke and Patna. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3130 lb./ac. (ii) 273.6 lb./ac. (iii) Main effect of T is significant. No other effect is significant. (iv) Av. yield of grain in lb./ac.

	T_1	T_2	T_3	Mean	L_1	L_2	L_3
S_1	3105	3161	2848	3038	3107	2974	3033
S_2	3222	3177	2918	3106	3212	3083	3020
S_3	3385	3189	3167	3247	3257	3270	3214
Mean	3237	3176	2978	3130	3192	3109	3089
L_1	3352	3257	2967				
L_2	3189	3186	2953				
L_3	3170	3083	3015				

S.E. of any marginal mean = 64.5 lb./ac.
S.E. of body of any table = 111.6 lb./ac.

Crop :- Paddy. **Ref :- Bh. 55(151).**

Site :- Bot. Sub-Stn., Bikramganj. **Type :- 'C'.**

Object :—To find out the effect of age, no. of seedlings and spacings on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Wheat—Paddy—Wheat. (b) Wheat. (c) A/S at 100 lb./ac.+Super at 100 lb./ac. (ii) (a) Sandy loam. (b) Refer soil analysis, Bikramganj. (iii) 22/29.6.1955 and 6.7.1955/26, 30.7.1955. (iv) (a) 3 ploughings by *desi* plough. (b) Transplanting. (c) 20 srs./ac. (d) and (e) As per treatments. (v) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (vi) BK—115 (early). (vii) Irrigated. (viii) Weeding. (ix) 34.76". (x) 16, 21.11.1955.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 54(36) above.

5. RESULTS:

(i) 2734 lb./ac. (ii) 344.1 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ae.

	T_1	T_2	T_3	Mean	L_1	L_2	L_3
S_1	2618	2572	2984	2725	2662	2804	2708
S_2	2627	2872	2914	2804	2840	2643	2931
S_3	2579	2869	2569	2672	2782	2623	2612
Mean	2608	2771	2822	2734	2761	2690	2750
L_1	2575	2598	2911				
L_2	2657	2612	2801				
L_3	2593	2903	2754				

S.E. of any marginal mean = 81.1 lb./ac.
S.E. of body of any table = 140.5 lb./ac.

Crop :- Paddy. **Ref :- Bh. 56(54).**
Site :- Bot. Sub-Stn., Bikramganj. **Type :- 'C'.**

Object :—To find out the effect of age, no. of seedlings and spacings on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Wheat—Paddy. (b) Wheat. (c) 100 lb./ac. of A/S+100 lb./ac. of Super. (ii) (a) Sandy loam. (b) Refer soil analysis, Bikramganj. (iii) 7.7.1956, 23.6.1956, 30.6.1956/28, 31.7.1956. (iv) (a) 3 ploughings and sowing by country plough. (b) Planting in lines. (c) 20 srs./ac. (d) and (e) As per treatments. (v) 200 lb./ac. of A/S+250 lb./ac. of Super. Half the dose of A/S applied at the time of puddling and the other half 3 weeks after transplanting and Super applied at the time of puddling. (vi) BK—115 (early). (vii) Irrigated. (viii) Weeding and interculturing by Japanese weeder. (ix) 46.49". (x) 18.12.1956.

2. TREATMENTS :

Same as in expt. no. 54(36) on page 139.

3. DESIGN :

(i) 3^3 partially confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) N.A. (iii) 2. (iv) (a) and (b) 15'×30'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Growth, flowering, straw and grain yield. (iv) (a) 1953—contd. (b) and (c) No. (v) (a) Sabour, Patna and Kanke. (b) No. (vi) Heavy rain and flood. (vii) Nil.

5. RESULTS :

(i) 2754 lb./ac. (ii) 372 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	T_1	T_2	T_3	Mean	L_1	L_2	L_3
S_1	2727	2925	2547	2733	2693	3046	2459
S_2	2564	2640	2984	2729	3000	2745	2443
S_3	2974	2635	2788	2799	2715	2789	2892
Mean	2755	2733	2773	2754	2803	2860	2598
L_1	2846	2838	2724				
L_2	2643	2974	2964				
L_3	2776	2388	2630				

S.E. of any marginal mean = 87.7 lb./ac.
S.E. of body of any table = 151·8 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 57(249).**

Site :- Bot. Sub-Stn., Bikramganj. **Type :- 'C'.**

Object :—To find out the effect of age, no. of seedlings and spacings on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Wheat. (c) 40 lb./ac. of N as A/S+40 lb./ac. of P as Super. (ii) (a) Sandy loam. (b) Refer soil analysis, Bikramganj. (iii) N.A./28 to 31.7.1957. (iv) (a) 4 ploughings. (b) Japanese method. (c) 10 srs./ac. (d) and (e) As per treatments. (v) 200 lb./ac. of A/S+250 lb./ac. of Super. (vi) BK—115. (vii) Unirrigated. (viii) 2 weedings and hoeings. (ix) 13.90″. (x) 19 to 23.11.1957.

2. TREATMENTS :

Same as in expt. no. 54(36) on page 139.

3. DESIGN

(i) 3^2 partially confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) N.A. (iii) 2. (iv) (a) 33′×18′. (b) 30′×15′. (v) 1½′×1½′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1954—1958. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 3497 lb./ac. (ii) 442.5 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	T_1	T_2	T_3	Mean	L_1	L_2	L_3
S_1	3452	3457	3663	3524	3578	3489	3505
S_2	3717	3113	3743	3524	3642	3509	3422
S_3	3547	3543	3236	3442	3402	3405	3520
Mean	3572	3371	3547	3497	3541	3468	3482
L_1	3535	3335	3752				
L_2	3617	3360	3426				
L_3	3565	3418	3464				

S.E. of any marginal mean = 104.3 lb./ac.
S.E. of body of any table = 180.6 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 58(299).**

Site :- Bot. Sub-Stn., Bikramganj. **Type :- 'C'.**

Object :—To find out the effect of age, no. of seedlings and spacings on the yield of Paddy.

1. BASAL CONDITIONS:

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Bikramganj. (iii) 25 to 28.7.1958. (iv) (a) 4 ploughings. (b) Japanese method. (c) 10 srs./ac. (d) and (e) As per treatments. (v) 200 lb./ac. of A/S+250 lb./ac. of Super. (vi) BK—115. (vii) Unirrigated. (viii) 2 weedings and hoeings. (ix) 42.93″. (x) 24.11.1958.

2. TREATMENTS :

Same as in expt. no. 54(36) on page 139.

3. DESIGN :

(i) 3^3 partially confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) N.A. (iii) 2. (iv) (a) 18'×28'. b) 15'×25'. (v) 1½'×1½'. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1953—1958. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2366 lb./ac. (ii) 254.9 lb./ac. (iii) Main effect of T is highly significant. Interaction S×T is significant. No other effect is significant. (iv) Av. yield of grain in lb./ac.

	T_1	T_2	T_3	Mean	L_1	L_2	L_3
S_1	2428	2136	2633	2399	2335	2479	2383
S_2	2543	2325	2245	2371	2245	2519	2349
S_3	2574	2196	2214	2328	2245	2414	2325
Mean	2515	2219	2364	2366	2275	2471	2352
L_1	2494	2041	2290				
L_2	2638	2255	2520				
L_3	2413	2361	2282				

S.E. of any marginal mean = 60.1 lb./ac.
S.E. of body of any table = 104.1 lb./ac.

Crop :- Paddy. **Ref :- Bh. 55(154).**
Site :- Bot. Sub-Stn., Bikramganj. **Type :- 'C'.**

Object :—To compare different cultural methods with Japanese method of Paddy cultivation.

1. BASAL CONDITIONS :

(i) (a) Wheat—Paddy—Wheat. (b) Wheat. (c) 100 lb./ac. of A/S+100 lb./ac. of P_2O_5. (ii) (a) Sandy loam. (b) Refer soil analysis, Bikramganj. (iii) 11.7.1955/29.8.1955. (iv) (a) 3 ploughings by *desi* plough. (b) As per treatments. (c) 20 srs./ac. (d) As per treatments. (e) N.A. (v) 20 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super. (vi) BK—115 (early). (vii) Irrigated. (viii) As per treatments. (ix) 31.62". (x) 12.12.1956.

2. TREATMENTS :

5 cultural treatments : C_1=Cultivators method of transplanting, C_2=Line planting with 10"×10" spacing, C_3=Broadcasting, C_4=Broadcasting+bushening (after about 45 days of sowing, ploughing and beaming were done) and C_5=Line planting with intercultivating 3 times.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 13'4"×23'4". (b) 11'8"×21'8". (v) one row alround. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Biometric observations and grain yield. Germination, flowering date, tiller-count. (iv) (a) 1955—N.A. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1831 lb./ac. (ii) 232.7 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	C_1	C_2	C_3	C_4	C_5
Av. yield	1778	1983	1567	1678	2149

S.E./mean = 116.3 lb./ac.

Crop :- Paddy. **Ref :- Bh. 55(153).**

Site :- Bot. Sub-Stn., Bikramganj. **Type :- 'C'.**

Object :—To compare the performance of the seed obtained from the main and ratoon crops of Paddy.

1. BASAL CONDITIONS :

(i) (a) Wheat—Paddy—Wheat. (b) Wheat. (c) 100 lb./ac. of A/S+100 lb./ac. of Super. (ii) (a) Sandy loam. (b) Refer soil analysis, Bikramganj. (iii) 11.7.1955/30.8.1955. (iv) (a) 3 ploughings by *desi* plough. (b) Transplanting in lines. (c) 20 srs./ac. (d) 9″×9″. (e) 2 to 3. (v) 20 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super. (vi) *Sona* (early). (vii) Irrigated. (viii) Weeding and interculturing by Japanese weeder. (ix) 31.62″. (x) 7.11.1955.

2. TREATMENTS :

1. Seed obtained from the main crop.
2. Seed obtained from the ratoon crop.

3. DESIGN :

(i) R.B.D. (ii) (a) 2. (b) 13½′×33′. (iii) 4. (iv) (a) and (b) 6′×33′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Flowering data and yield of grain. (iv) (a) No. (b) and (c) Nil. (v) (a) and (b) No. (vi) Nil. (vii) In the second crop earing was not satisfactory and the crop practically failed. Ears were sterile.

5. RESULTS :

(i) 2100 lb./ac. (ii) 248.6 lb./ac. (iii) Treatment difference is not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2
Av. yield	2142	2058

S.E./mean = 124.3 lb./ac.

Crop :- Paddy. **Ref :- Bh. 56(50).**

Site :- Bot. Sub-Stn., Bikramganj. **Type :- 'C'.**

Object :—To find out the effect of time of planting on the yield of Paddy.

1. BASAL CONDITIONS ;

(i) (a) Paddy—*Paira* gram—Paddy. (b) Gram. (c) Nil. (ii) (a) Clayey loam. (b) Refer soil analysis, Bikramgang. (iii) Early : 18.5.1956/18.6.1956 ; Normal : 20.6.1956/20.7.1956 ; Late : 13.7.1956/24.8.1956. (iv) (a) 3 ploughings by *desi* plough. (b) Transplanting. (c) 20 srs./ac. (d) 10″×10″. (e) 2 to 3.(v) 100 lb./ac. of A/S+250 lb./ac. of Super applied at puddling. (vi) BK—36 (late). (vii) Irrigated. (viii) Hoeing and weeding by Japanese weeder. (ix) N.A. (x) 21, 22.12.1956.

2. TREATMENTS :

5 methods of sowing/transplanting : M_1=Early sowing and early transplanting, M_2=Early sowing and late transplanting, M_3=Late sowing and normal transplanting, M_4=Late sowing and late transplanting and M_5=Normal sowing and normal transplanting.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 2. (iv) (a) and (b) 62½′×22½′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Growth, flowering and yield of grain. (iv) (a) 1958—contd. (b) Yes. (c) Nil. (v) (a) Sabour. (b) N.A. (vi) Floods during Sept., 1956. (vii) Nil.

5. RESULTS :

(i) 214.6 lb./ac. (ii) 52.0 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3	M_4	M_5
Av. yield	247.6	195.7	223.7	137.4	268.4

S.E./mean = 36.7 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 57(247).**

Site :- Bot. Sub-Stn., Bikramganj. **Type :- 'C'.**

Object :—To find out the effect of time of planting on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Gram. (c) Nil. (ii) (a) Clayey loam. (b) Refer soil analysis, Bikramganj. (iii) Early : 18.5.1957/19.7.1957 ; Normal : 20.6.1957/4.8.1957 ; Late : 12.7.1957/17.8.1957. (iv) (a) 5 ploughings. (b) Transplanting (c) 8 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) 100 lb./ac. of A/S+250 lb./ac. of Super at planting and 100 lb./ac. of A/S three weeks after planting. (vi) BK–36 (late). (vii) Unirrigated. (viii) Hoeing and weeding by Japanese weeder. (ix) 13.90″. (x) 7 to 9.12.1957.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 56(50) on page 143.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1956—1957. (b) Yes. (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 5746 lb./ac. (ii) 230 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3	M_4	M_5
Av. yield	6552	6136	5075	4143	6824

S.E./mean = 162.6 lb./ac.

Crop :- Paddy. **Ref :- Bh. 54(17).**

Site :- Bot. Sub-Stn., Kanke. **Type :- 'C'.**

Object :—To find out the best combination of age of seedlings, spacing and no. of seedlings per hole for getting the maximum yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Fallow—Paddy. (b) Paddy. (c) 10 C.L./ac. of F.Y.M.+40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (ii) (a) Lateritic soil. (b) N. A. (iii) 22.6.1954, 29.6.1954 and 6.7.1954/28.7.1954. (iv) (a) 3 ploughings by *desi* plough. (b) N.A. (c) 10 srs./ac. (d) and (e) As per treatments. (v) 10 C.L./ac. of F.Y.M.+40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super green manured by *dhaincha*. (vi) BK—36 (late). (vii) Unirrigated. (viii) 2 hand weedings and 2 interculturings with rotary hoe. (ix) 35.92″. (x) 17. 12.1954.

2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 3 spacings : $S_1=6''\times6''$, $S_2=6''\times10''$ and $S_3=10''\times10''$.
(2) 3 ages of seedlings : $T_1=3$, $T_2=4$ and $T_3=5$ weeks old.
(3) No. of seedlings/hole : $L_1=2$, $L_2=4$ and $L_3=6$.

3. DESIGN :

(i) 3^3 partially confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) N.A. (iii) 2. (iv) (a) $S_1 : 8'6''\times26'0''$; $S_2 : 8'6''\times26'8''$; $S_3 : 9'2''\times26'8''$. (b) 7′6″×25′. (v) One row alround. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of grain and straw. (iv) (a) 1954—contd. (b) No. (c) Nil. (v) (a) Sabour, Patna, Bikramganj, Dumka and Purnea. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 693 lb./ac. (ii) 203.9 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	T_1	T_2	T_3	Mean	L_1	L_2	L_3
S_1	571	649	808	676	709	685	634
S_2	852	626	634	704	610	695	808
S_3	697	767	629	698	762	694	636
Mean	707	681	690	693	694	691	693
L_1	750	685	646				
L_2	649	615	810				
L_3	721	743	614				

S.E. of any marginal mean = 48.1 lb./ac.
S.E. of body of any table = 83.2 lb./ac.

Crop :- Paddy. **Ref :- Bh. 55(20).**
Site :- Bot. Sub-Stn., Kanke. **Type :- 'C'.**

Object :—To find out the best combination of age of seedlings, spacing and no. of seedlings per hole for getting the maximum yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Fallow—Paddy. (b) Paddy. (c) 10 C.L./ac. of F.Y.M.+40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (ii) (a) Lateritic soil. (b) N.A. (iii) 13.7.1955, 6.7.1955 and 29.6.1955/4.8.1955. (iv) (a) 3 ploughings by *desi* plough. (b) N.A. (c) 10 srs./ac. (d) and (e) As per treatments. (v) Green manure with *dhaincha*+10 C.L./ac. of F.Y.M.+40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (vi) BK—36 (late). (vii) Unirrigated. (viii) 2 weedings and 2 interculturings with rotary hoe. (ix) 31.10". (x) 13.12.1955.

2. TREATMENTS :

Same as in expt. no. 54(17) on page 144.

3. DESIGN :

(i) 3^3 partially confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) N.A. (iii) 2. (iv) (a) For S_1 : 31'×8'6", for S_2 : 31'8"×8'6" and for S_3 : 31'8"×9'2". (b) 30'×7'6". (v) N.A. (vi) Yes.

4. GENERAL :

Same as in expt. no. 54(17) on page 144.

5. RESULTS :

(i) 1857 lb./ac. (ii) 501.6 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	T_1	T_2	T_3	Mean	L_1	L_2	L_3
S_1	1876	1605	1833	1771	2063	1619	1631
S_2	1948	1950	1911	1936	1954	2055	1800
S_3	2123	1597	1871	1864	1792	1712	2087
Mean	1982	1717	1872	1857	1936	1795	1839
L_1	2071	1809	1929				
L_2	1678	1714	1994				
L_3	2198	1629	1692				

S.E. of any marginal mean = 118.2 lb./ac.
S.E. of body of any table = 204.8 lb./ac.

Crop :- Paddy. **Ref :- Bh. 56(15).**
Site :- Bot. Sub-Stn., Kanke. **Type :- 'C'.**

Object :—To find out the best combination of age of seedlings, spacing and no. of seedlings per hole for getting the maximum yield of Paddy .

1. BASAL CONDITIONS :

(i) (a) *Dhaincha*—Paddy. (b) *Dhaincha*. (c) 40 lb./ac. P_2O_5 as Super. (ii) Sandy loam. (b) N.A. (iii) 30.6.1959 ; 23.6.1956 ; 16.6.1956/24.7.1956. (iv) (a) Seedling raised by Japanese method. (b) Transplanting. (c) 7 srs./ac. (d) and (e) As per treatments. (v) 20 lb./ac. of N as A/S at the time of puddling and 20 lb./ac. 3 weeks after transplanting. (vi) Late. (vii) Unirrigated. (viii) Weeding by rotary hoe 3 weeks after transplanting. (ix) 31.61″. (x) 21.12.1956.

2. TREATMENTS :

Same as in expt. no. 54(17) on page 144.

3. DESIGN :

(i) 3^3 partially confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) N.A. (iii) 2. (iv) (a) 31′8″×9′2″. (b) 30′×7′4″. (vi) Yes.

4. GENERAL :

Same as in expt. no. 54(17) on page 144.

5. RESULTS :

(i) 3426 lb./ac. (ii) 382.3 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	T_1	T_2	T_3	Mean	L_1	L_2	L_3
S_1	3626	3556	2996	3393	3566	3433	3178
S_2	3367	3373	3320	3353	3437	3276	3348
S_3	3509	3403	3683	3532	3607	3450	3539
Mean	3501	3444	3333	3426	3537	3386	3355
L_1	3337	3598	3675				
L_2	3577	3242	3339				
L_3	3588	3492	2985				

S.E. of any marginal mean = 90.1 lb./ac.
S.E. of body of any table = 156.1 lb./ac.

Crop :- Paddy. **Ref :- Bh. 57(97).**

Site :- Bot. Sub-Stn., Kanke. **Type :- 'C'.**

Object :—To find out the best combination of age of seedlings, spacing and no. of seedlings per hole for getting the maximum yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 40 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy loam. (b) N.A. (iii) 11.7.1957, 4.7.1957 and 27.6.1957./2.8.1957. (iv) (a) 3 ploughings with *desi* plough. (b) Japanese method. (c) 7 srs./ac. (d) and (e) As per treatments. (v) 20 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super at the time of puddling and 20 lb./ac. of N as A/S 3 weeks after transplanting. (vi) BK—36. (vii) Unirrigated. (viii) 1 weeding by rotary hoe and one hand wee ding. (ix) 40.84". (x) 23.12.1957.

2. TREATMENTS :

Same as in expt. no. 54(17) on page 144.

3. DESIGN :

(i) 3^3 partially confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) 92′6″×31′8″. (iii) 2. (iv) (a) 31′8″×9′2″. (b) 30′×7′6″. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Heavy attack of helminthosporium and mild attack of blast. (iii) Plant height, no. of tillers, grain and straw yield. (iv) (a) 1954—contd. (b) No (c) Nil. (v) (a) Patna, Sabour, Pusa, and Bikramganj. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 2341 lb./ac. (ii) 398.0 lb./ac. (iii) Main effect of S and interaction S×T are highly significant. Main effects of P, K and interactions L×T and L×S are significant. (iv) Av. yield of grain in lb./ac.

	T_1	T_2	T_3	Mean	L_1	L_2	L_3
S_1	2431	3190	2373	2665	2547	2808	2638
S_2	2057	2530	2290	2292	1825	2149	2904
S_3	2165	1979	2053	2066	1987	2082	2128
Mean	2218	2566	2239	2341	2120	2346	2557
L_1	1705	2692	1962				
L_2	2244	2389	2406				
L_3	2704	2617	2348				

S.E. of any marginal mean = 93.8 lb./ac.
S.E. of body of any table = 162.5 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 58(75).**

Site :- Bot. Sub-Stn., Kanke. **Type :- 'C'.**

Object :—To find out the best combination of age of seedlings, spacing and no. of seedlings per hole for getting the maximum yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 7.7.1958, 30.6.1958 and 23.6.1958/29.7.1958. (iv) (a) 4 ploughings. (b) Japanese method. (c) 7 srs./ac. (d) and (e) As per treatments. (v) 20 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super at the time of puddling and 20 lb./ac. of N as A/S 3 weeks after planting. (vi) BK—36. (vii) Unirrigated. (viii) Weeding by rotary hoe. (ix) 30.2" (x) 13.12.1958.

2. TREATMENTS :

Same as in expt. no. 54(17) on page 144.

3. DESIGN :

Same as in expt. no. 57(97) on page 147.

4. GENERAL :

Same as in expt. no. 54(17) on page 144.

5. RESULTS :

(i) 3951 lb./ac. (ii) 2061 lb./ac. (iii) Only main effect of S is significant. (iv) Av. yield of grain in lb./ac,

	T_1	T_2	T_3	Mean	L_1	L_2	L_3
S_1	3390	4032	4254	3892	3974	3949	3752
S_2	3760	4336	4525	4207	4138	4295	4188
S_3	3242	3801	4221	3755	3424	3982	3859
Mean	3464	4056	4333	3951	3845	4075	3933
L_1	3243	4048	4245				
L_2	3570	4270	4385				
L_3	3579	3851	4369				

S.E. of any marginal mean = 485.7 lb./ac.
S.E. of body of any table = 841.3 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 56(96).**
Site :- Agri. Res. Instt., Kanke. **Type :- 'C'.**

Object .—To find out suitable seed rate in combination with method of sowing for Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Gram. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Kanke. (iii) N.A./6.6.1956. (iv) (a) 3 ploughings followed by puddling. (b) to (d) As per treatments. (e) N.A. (v) 15 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super at the time of sowing and 15 lb./ac. of N as A/S after one month of sowing. (vi) CH—10 (early). (vii) Unirrigated. (viii) 3 weedings and 2 hoeings. (ix) 28.8″. (x) 27, 28.9.1956.

2. TREATMENTS :

Strips in one direction :
3 months of sowing : M_1=Broadcast, M_2=Line sowing 12″ apart and M_3=Line sowing 12″ apart.
Strips in orthogonal direction :
2 seed rates : R_1=15 and R_2=25 srs./ac.

3. DESIGN :

(i) Strip-plot. (ii) (a) 6. (b) 78′×116′. (iii) 4. (iv) (a) 74′×17′. (b) 72′×15′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yields. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) Nil. (vii) Expt. failed in 1957 and was modified in 1958.

5. RESULTS :

(i) 1561 lb./ac. (ii) (a) 173 lb./ac. (b) 166 lb./ac. (c) 308 lb./ac. (iii) Only R effect is significant. (iv) Av. yield of grain in lb./ac.

	M_1	M_2	M_3	Mean
R_1	1267	1568	1515	1450
R_2	1642	1550	1824	1672
Mean	1455	1559	1669	1561

S.E. of difference of two

1. M marginal means	=	86.5 lb./ac.
2. R marginal means	=	67.8 lb./ac.
3. R means at the same level of M	=	176.8 lb./ac.
4. M means at the same level of R	=	192.6 lb./ac.

Crop :- Paddy ***(Kharif).*** **Ref :- Bh. 58(71).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'C'.**

Object :—To find out suitable seed rate in combination with method of sowing for Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Jowar.* (c) Nil. (ii) (a) Red laterite. (b) Refer soil analysis, Kanke. (iii) N.A./24 to 28.6.1958. (iv) (a) 3 ploughings followed by planking. (b) to (d) As per treatments. (e) N.A. (v) 20 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super at puddling. (vi) 45-9 (black). (vii) Nil. (viii) Hoeing and weeding. (ix) 40.39″. (x) 29.9.1958 and 2.10.1958.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 3 methods of sowing : M_1=Broadcast, M_2=Line sowing 9″ apart and M_3=Line sowing 12″ apart.
(2) 4 seed rates : R_1=20, R_2=30, R_3=40 and R_4=50 srs./ac.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 12. (b) 206′×36′. (iii) 4. (iv) (a) 36′×15′. (b) 34′×13′. (v) One foot alround. (vi) Yes.

4. GENERAL :

Same as in expt. no. 56(96) on page 148.

5. RESULTS :

(i) 1852 lb./ac. (ii) 380 lb./ac. (iii) M effect is highly significant and R effect is significant. (iv) Av. yield of grain in lb./ac.

	R_1	R_2	R_3	R_4	Mean
M_1	1115	1470	1698	1419	1425
M_2	1672	1977	2053	2331	2008
M_3	1900	2281	2129	2179	2122
Mean	1563	1909	1960	1977	1852

S.E. of R marginal mean	=	109.7 lb./ac.
S.E. of M marginal mean	=	95.0 lb./ac.
S.E. of body of table	=	190.0 lb./ac.

Crop :- Paddy ***(Kharif).*** **Ref :- Bh. 57(49).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'C'.**

Object :—To study the best method of sowing Paddy and to assess the influence of interculture on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Kanke. (iii) 7.7.1957. (iv) (a) and (b) As per treatments. (c) 30 srs./ac. (d) and (e) N.A. (v) 20 lb./ac. of N as A/S and 20 lb./ac. of P as Super applied at the time of sowing. (vi) Black *gora* Paddy. (vii) Unirrigated. (viii) As per treatments. (ix) 28.40″. (x) 14.10.1957.

2. TREATMENTS :

All combinations of (1) and (2)+two extra treatments

(1) 3 types of interculture implements : I_1=Disc plough, I_2=Land hoe and I_3=Disc by *khurpi*.

(2) Number of intercultivations : C_1=1 and C_2=2.

Extra treatments : T_1=Broadcasting and T_2=Line sowing.

Method of line sowing was adopted for all the treatments in the combinations of (1) and (2) above.

3. DESIGN:

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) and (b) 24′×15′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) No lodging. (ii) Nil. (iii) Grain yield. (iv) (a) 1957—1958. (b) No. (c) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 406 lb./ac. (ii) 149.1 lb./ac. (iii) No effect is significant. (iv) Av. yield of grain in lb./ac.

T_1=463 lb./ac. and T_2=189 lb./ac.

	I_1	I_2	I_3	Mean
C_1	428	420	528	459
C_2	390	397	432	406
Mean	409	408	480	432

S.E. of C marginal mean = 43.0 lb./ac.
S.E. of I marginal mean = 52.7 lb./ac.
S.E. of body of table = 74.5 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 58(77).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'C'.**

Object :—To study the best method of sowing Paddy and to assess the influence of interculture on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Laterite soil. (b) Refer soil analysis, Kanke. (iii) 22, 23, 24.6.1958. (iv) (a) 3 ploughings. (b) As per treatments. (c) 30 srs./ac. (d) Between rows 12″. (e) —. (v) 20 lb./ac. of N as A/S+20 lb./ac. of P as Super at sowing. (vi) Brown *gora* 76—8. (vii) Nil. (vii) As per treatments. (ix) 38.83″. (x) 5.10.1958.

2. TREATMENTS :

Same as in expt. no. 57(49) on page 149.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 30′×15′. (b) 35′×14′. (v) 6″×6″. (vi) Yes.

4. GENERAL :

Same as in expt. no. 57(49) on page 149.

5. RESULTS :

(i) 1454 lb./ac. (ii) 476.7 lb./ac. (iii) 'Extra treatments *vs.* others' alone is significant. (iv) Av. yield of grain in lb./ac.

T_1 = 1899 lb./ac. and T_2 = 1831 lb./ac.

	I_1	I_2	I_3	Mean
C_1	1763	1262	916	1314
C_2	1236	1465	1259	1320
Mean	1500	1363	1088	1317

S.E. of C marginal mean = 137.6 lb./ac.
S.E. of I marginal mean = 168.5 lb./ac.
S.E. of body of table = 238.3 lb./ac.

Crop :- Paddy ***(Kharif).*** **Ref :- Bh. 57(48).**
Site :- Agri. Res. Instt., Kanke. **Type :- 'C'.**

Object :—To study the effect of legumes on Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Kanke. (iii) 11.7.1957. (iv) (a) 3 ploughings. (b) As per treatments. (c) 30 srs./ac. (d) and (e) —. (v) 20 lb./ac. of N as A/S and 20 lb./ac. of P_2O_5 as Super at the time of sowing. (vi) Black *gora* paddy 5748. (vii) Irrigated. (viii) 1 weeding. (ix) 28.57". (x) 13.10.1957.

2. TREATMENTS :

All combinations of (1) and (2)
(1) 3 crop mixtures : C_1=Paddy alone, C_2=Paddy+*kalai* and C_3=Paddy+*kalai*+*rahar*.
(2) 2 methods of planting : M_1=Broadcasting and M_2=planting in lines 1′ apart.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 6. (b) 150′×45′. (iii) 4. (iv) (a) and (b) 45′×24′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) No lodging. (ii) Nil. (iii) Grain and straw weight. (iv) (a) 1957—1959. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 310.0 lb./ac. (ii) 155.9 lb./ac. (iii) No effect is significant. (iv) Av. yield of grain in lb./ac.

	C_1	C_2	C_3	Mean
M_1	268.4	326.7	269.6	288.2
M_2	316.3	370.8	308.5	331.9
Mean	292.3	348.7	289.0	310.0

S.E. of C marginal mean = 55.1 lb./ac.
S.E. of M marginal mean = 45.0 lb./ac.
S.E. of body of table = 77.9 lb./ac.

Crop :- Paddy ***(Kharif).*** **Ref :- Bh. 58(78).**
Site :- Agri. Res. Instt., Kanke. **Type :- 'C'.**

Object :—To study the effect of legumes on Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Lateritic soil. (b) N.A. (iii) 29.6.1958. (iv) (a) 3 ploughings. (b) As per treatments. (c) 30 srs./ac. (d) and (e) —. (v) 20 lb./ac. of N as A/S+20 lb./ac. of P as Super at sowing. (vi) Black *Gora*—5748 (early). (vii) N.A. (viii) 2 weedings and 1 hoeing. (ix) 38.82″. (x) 11.10.1958.

2. TREATMENTS :

Same as in expt. no. 57(48) on page 151.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 35′×15′. (b) 32′×14′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1957—1958. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 277 lb./ac. (ii) 122.8 lb./ac. (iii) C effect alone is significant. (iv) Av. yield of grain in lb./ac.

	C_1	C_2	C_3	Mean
M_1	356	322	134	271
M_2	378	247	228	284
Mean	367	284	181	277

S.E. of C marginal mean = 43.4 lb./ac.
S.E. of M marginal mean = 35.4 lb./ac.
S.E. of body of table = 61.4 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 59(34).**
Site :- Agri. Res. Instt., Kanke. **Type :- 'C'.**

Object :—To find out the effect of G.M. on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy loam. (b) Refer soil analysis, Kanke. (iii) 26.6.1959/31.8.1959. (iv) (a) 2 ploughings by *desi* plough. (b) Japanese method. (c) 7 srs./ac. (d) 10″×10″. (e) —. (v) F.Y.M. at 10 C.L./ac. (vi) BK—36 (late). (vii) N.A. (viii) 2 weedings and 1 hoeing. (ix) 41.3″. (x) 15.12.1959.

2. TREATMENTS :

6 G.M. crops grown with Paddy : G_0=Fallow (control), G_1=*Glyricidia*, G_2=*Butea*, G_3=*Ipomea Cornea*, G_4=*Dhaincha* and G_5=P. *Globra.*

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) 33′×90′. (iii) 4. (iv) (a) 31′8″×15′. (b) 30′×13′4″. (v) One row alround. (vi) Yes.

4. GENERAL :

(i) Below average. (ii) Nil. (iii) Tiller count, yield of grain and straw. (iv) (a) No. (b) and (c) —. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 106.7 lb./ac. (ii) 89.8 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	G_0	G_1	G_2	G_3	G_4	G_5
Av. yield	68.2	49.0	75.2	140.0	124.2	183.7

S.E./mean = 44.9 lb./ac.

Crop :- Paddy ***(Kharif).*** **Ref :- Bh. 56(242).**

Site :- Agri. Res. Instt., Patna. **Type :- 'C'.**

Object :—To study the effect of different combinations of age of seedlings, spacings and number of seedlings per hole on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Heavy clay. (b) Refer soil analysis, Patna. (iii) 9, 16, 23.6.1956/ 28 to 30.7.1956. (iv) (a) 5 ploughings by *desi* plough. (b) Japanese method. (c) 7 srs./ac. (d) and (e) As per treatments. (v) 40 lb /ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (vi) BK—36. (vii) Irrigated. (viii) 1 weeding and earthing up. (ix) 29.11". (x) 15, 16.11.1956.

2. TREATMENTS :

All combinations of (1), (2) and (3)
- (1) 3 spacings : $S_1=6'' \times 6''$, $S_2=6'' \times 10''$ and $S_3=10'' \times 10''$.
- (2) 3 ages of seedlings : $T_1=3$, $T_2=4$ and $T_3=5$ weeks old.
- (3) Number of seedlings per hole : $L_1=2$, $L_2=4$ and $L_3=6$.

3. DESIGN :

(i) 3^3 confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) 140'×96'. (iii) 2. (iv) (a) N.A. (b) 30'×7'6". (v) 1 row on all sides. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1954—1957. (b) No. (c) Nil. (v) (a) Sabour, Bikramganj, Purnea, Dumka and Kanke. (b) N.A. (vi) Nil. (vii) Expt. was conducted during 1954 and 1955 at Bot. Sub-Stn., Patna and continued later at Agri. Res. Instt., Patna.

5. RESULTS :

(i) 2575 lb./ac. (ii) 317.6 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	T_1	T_2	T_3	Mean	L_1	L_2	L_3
S_1	2825	2580	2430	2612	2460	2565	2809
S_2	2476	2543	2835	2618	2462	2591	2801
S_3	2317	2470	2694	2494	2652	2261	2569
Mean	2539	2531	2653	2575	2525	2472	2726
L_1	2720	2440	2414				
L_2	2418	2366	2634				
L_3	2480	2787	2912				

S E. of any marginal mean = 74.9 lb./ac.
S.E. of body of any table = 129.7 lb./ac.

Crop :- Paddy ***(Kharif).*** **Ref :- Bh. 57(170).**

Site :- Agri. Res. Instt., Patna. **Type :- 'C'.**

Object : To study the effect of different combinations of age of seedlings, spacings and number of seedlings per hole on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Dhaincha* for G.M. (c) —. (ii) (a) Heavy clay. (b) Refer soil analysis, Patna. (iii) N A./ 31.7.1957. (iv) (a) 4 ploughings by *desi* plough. (b) Japanese method. (c) 20 srs./ac. (d) and (e) As per treatments. (v) G.M. with *dhaincha* and 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (vi) BK—36 (late). (vii) Unirrigated. (viii) Hoeing and weeding. (ix) 28.39". (x) 3.12.1957.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 56(242) above.

5. RESULTS :

(i) 4078 lb./ac. (ii) 313.1 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	T_1	T_2	T_3	Mean	L_1	L_2	L_3
S_1	4203	4064	3991	4086	4187	4233	3838
S_2	4287	3844	4102	4078	4072	4130	4032
S_3	4146	4015	4048	4070	4084	4027	4098
Mean	4212	3974	4047	4078	4114	4130	3989
L_1	4142	4019	4181				
L_2	4332	4021	4038				
L_3	4163	3881	3923				

S.E. of any marginal mean = 73.8 lb./ac.
S.E. of body of any table = 127.8 lb./ac.

Crop :-Paddy ***(Kharif).*** **Ref :- Bh. 56(185).**
Site :- Agri. Res. Instt., Patna. **Type :- 'C'.**

Object :—To see the efficiency of different puddlers on Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Heavy clay. (b) Refer soil analysis, Patna. (iii) 21.7.1956. (iv) (a) As per treatments. (b) Japanese method. (c) 10 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) 40 lb./ac. of N as A/S+40 lb./ac. of P as Super at planting. (vi) CH—10 (early). (vii) Unirrigated. (viii) 1 weeding. (ix) N.A. (x) 15.10.1956.

2. TREATMENTS :

3 kinds of puddlers : M_1 = *Desi* plough, M_2=P.S.G. puddler and M_3=Cossul puddler.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 0.0585 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1956—N.A. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1300 lb./ac. (ii) 68.6 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3
Av. yield	1324	1347	1230

S.E./mean = 28.0 lb./ac.

Crop :- Paddy ***(Kharif).*** **Ref :- Bh. 57(185).**
Site :- Agri. Res. Instt., Patna. **Type :- 'C'.**

Object :—To test the efficiency of different puddlers on Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Heavy clay. (b) Refer soil analysis, Patna. (iii) 7.8.1957. (iv) (a) As per treatments. (b) Japanese method. (c) 10 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) 40 lb./ac. of N as A/S+40 lb./ac. of P as Super at planting. (vi) CH—10. (vii) Unirrigated. (viii) 1 weeding. (ix) 11.69″. (x) 4.12.1957.

2. TREATMENTS :

4 kinds of puddlers : M_1=*Desi* plough, M_2=P.S.G. puddler. M_3=Cossul puddler and M_1=Modified puddler.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) N.A. (b) 35′×70′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Number of tillers, grain and straw yield. (iv) (a) 1956—N.A. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3076 lb./ac. (ii) 259.2 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3	M_4
Av. yield	3094	3094	2962	3154

S.E./mean = 115.9 lb./ac.

Crop :- Paddy. **Ref :- Bh. 54(34).**

Site :- Bot. Sub-Stn., Patna. **Type :- 'C'.**

Object :—To study the effect of different combinations of age of seedlings, spacings and no. of seedlings per hole on the yield of Paddy.

1. BASAL CONDITIONS:

(i) (a) Sugarcane—Paddy. (b) Sugarcane. (c) N.A. (ii) Heavy clay soil. (b) N.A. (iii) 7, 14, 21.6.1954/ 2.8.1954. (iv) (a) 3 ploughings and puddling. (b) Transplanting. (c) 20 srs./ac. (d) and (e) As per treatments. (v) Nil. (vi) BK—36 (late). (vii) Irrigated. (viii) Weeding. (ix) 22.12.1954.

2. TREATMENTS

All combinations of (1), (2) and (3)

(1) 3 spacings : S_1=6″×6″, S_2=6″×10″ and S_3=10″×10″.
(2) 3 ages of seedlings : T_1=3, T_2=4 and T_3=5 weeks old.
(3) No. of seedlings per hole : L_1=2, L_2=4 and L_3=6.

3. DESIGN :

(i) 3^3 confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) N.A. (iii) 2. (iv) (a) N.A. (b) 30′×7′6″. (v) One line alround the net plot. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) 1954—1955. (b) No. (c) Nil. (v) (a) Bikramganj, Purnea, Sabour, Dumka and Kanke. (b) N.A. (vi) Nil. (vii) Venue of the expt. was shifted to Agri. Res. Instt., Patna from 1956 onwards.

5. RESULTS :

(i) 2762 lb./ac. (ii) 765.3 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	T_1	T_2	T_3	Mean	L_1	L_2	L_3
S_1	2738	2937	2987	2887	2937	2837	2887
S_2	2987	2199	2547	2578	2954	2464	2315
S_3	2813	2638	3012	2821	2630	2962	2871
Mean	2846	2591	2849	2762	2840	2754	2691
L_1	2937	2647	2937				
L_2	2613	3086	2564				
L_3	2987	2041	3045				

S.E. of any marginal mean = 180.4 lb./ac.
S.E. of body of any table = 312.5 lb./ac.

Crop :- Paddy. **Ref :- Bh. 55(150).**

Site :- Bot. Sub-Stn., Patna. **Type :- 'C'.**

Object :—To study the effect of different combinations of age of seedlings, spacings and no. of seedlings per hole on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Paddy. (b) Sugarcane. (c) Nil. (ii) (a) Heavy clay soil—Neutral. (b) N.A. (iii) 14, 21, 28.6.1955/25, 26.7.1955. (iv) (a) 3 ploughings and puddling. (b) Transplanting. (c) 20 srs./ac. (d) and (e) As per treatments. (v) Nil. (vi) BK—36 (late). (vii) Irrigated. (viii) Weeding. (ix) 45.21". (x) 10.12.1956.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 54(34) on page 155.

5. RESULTS :

(i) 1557 lb./ac. (ii) 138.3 lb./ac. (iii) Only main effect of T is significant. (iv) Av. yield of grain in lb./ac.

	T_1	T_2	T_3	Mean	L_1	L_2	L_3
S_1	1642	1468	1593	1568	1500	1617	1585
S_2	1557	1537	1545	1546	1537	1593	1508
S_3	1646	1444	1581	1557	1476	1541	1654
Mean	1615	1483	1573	1557	1504	1584	1582
L_1	1508	1496	1508				
L_2	1670	1496	1585				
L_3	1666	1456	1625				

S.E. of any marginal mean = 32.6 lb./ac.
S.E. of body of any table = 56.5 lb./ac.

Crop :- Paddy ***(Kharif).*** **Ref :- Bh. 57(137).**

Site :- Distt. Agri. Farm, Putida. **Type :- 'C'.**

Object :—To study the effect of different methods of sowing with different seed rates.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Gram. (c) Nil. (ii) (a) Clayey loam. (b) N.A. (iii) 8, 10.7.1957. (iv) (a) 4 ploughings. (b) to (e) As per treatments. (v) 20 lb./ac. of N as A/S+40 lb./ac. of P as Super applied on 8.7.1957 and 20 lb./ac. of N as A/S on 31.7.1957. (vi) CH—10. (vii) Unirrigated. (viii) 2 weedings. (ix) 26.45". (x) 9.10.1957.

2. TREATMENTS :

Main-plot treatments :

3 methods of sowing : M_1=Broadcasting, M_2=Line sowing with 9" between rows and M_3=Line sowing with 12" between rows.

Sub-plot treatments :

2 seed rates : R_1=15 and R_2=25 srs./ac.

3. DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/block ; 2 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 30'×20'. (b) 28'×18'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Slight attack of *gundli* bug—5% BHC sprayed. (iii) Grain and straw yield. (iv) (a) 1957—1958 (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1332 lb./ac. (ii) (a) 206.5 lb./ac. (b) 214.9 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	M_1	M_2	M_3	Mean
R_1	1186	1350	1250	1262
R_2	1400	1450	1356	1402
Mean	1293	1400	1303	1332

S.E. of difference of two

1. M marginal means = 103.3 lb./ac.
2. R marginal means = 87.7 lb./ac.
3. R means at the same level of M = 152.0 lb./ac
4. M means at the same level of R = 149.0 lb./ac.

Crop :- Paddy ***(Kharif).*** **Ref :- Bh. 58(136).**

Site :- Distt. Agri. Farm, Putida. **Type :- 'C'.**

Object :—To study the effect of different methods of sowing with different seed rates.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 40 lb./ac. of N as A/S+40 lb./ac. of P as Super. (ii) (a) Clayey loam. (b) N.A. (iii) 4.7.1958/N.A. (iv) (a) 4 ploughings. (b) to (e) As per treatments. (v) 20 lb./ac. of N as A/S+30 lb./ac. of P as Super at sowing and 20 lb./ac. of N as A/S one month after sowing. (vi) CH—10. (vii) Unirrigated. (viii) 2 weedings. (ix) 14.87". (x) 23.10.1958.

2. TREATMENTS :

Same as in expt. no. 57(137) above.

3. DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/replication ; 2 sub-plots/main-plot. (iii) 4. (iv) (a) 42'×13'. (b) 40'×11'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

Same as in expt. no. 57(137) on page 157.

5. RESULTS :

(i) 1392 lb./ac. (ii) (a) 215.4 lb./ac. (b) 247.3 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	M_1	M_2	M_3	Mean
R_1	1419	1222	1629	1423
R_2	1228	1394	1457	1360
Mean	1324	1308	1543	1392

S.E. of difference of two

1. M marginal means = 107.7 lb./ac.
2. R marginal means = 101.0 lb./ac.
3. R means at the same level of M = 174.9 lb./ac.
4. M means at the same level of R = 164.0 lb./ac.

Crop :- Paddy. **Ref :- Bh. 58(138).**

Site :- Distt. Agri. Farm, Putida. **Type :- 'C'.**

Object :—To study the best method of sowing paddy and to assess the influence of interculture on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) and (b) *Rahar.* (c) N.A. (ii) (a) Clayey loam. (b) N.A. (iii) 2.7.1958. (iv) (a) 3 ploughings. (b) As per treatments. (c) 30 srs./ac. (d) Row to row 10″. (e) —. (v) 20 lb./ac. of N as A/S+20 lb./ac. of P as Super at sowing. (vi) 96—8 *gora* Paddy. (vii) Unirrigated. (viii) As per treatments. (ix) 12.87″. (x) 12.10.1958.

2. TREATMENTS :

All combinations of (1) and (2)+two extra treatments

(1) 3 types of intercultural implements : I_1=*Desi* plough, I_2=Hand hoe and I_3=*Doby khurpi.*

(2) 2 frequencies of intercultivation : $C_1=1$ and $C_2=2$

Extra treatments : T_1=Broadcasting and T_2=Line sowing.

Method of line sowing was adopted for all the combinations.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 3. (iv) (a) 35′×14′. (b) 33′×12′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Slight attack of *gundli bug*—no control measures were taken. (iii) Grain and straw yield. (iv) (a) to (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 1269 lb./ac. (ii) 289.6 lb./ac. (iii) No effect is significant. (iv) Av. yield of grain in lb./ac.

T_1 = 1103 lb./ac. and T_2 = 1320 lb./ac.

	I_1	I_2	I_3	Mean
C_1	1160	1216	1263	1213
C_2	1376	1254	1461	1364
Mean	1268	1235	1362	1288

S.E. of C marginal mean = 96.5 lb./ac.
S.E. of I marginal mean = 128.2 lb./ac.
S.E. of body of table or extra treatment mean = 167.2 lb./ac.

Crop :- Paddy. **Ref :- Bh. 54(44).**
Site :- Agri. Res. Instt., Sabour. **Type :- 'C'.**

Object :—To study the effect of different combinations of spacing, age and no. of seedlings per hole on Paddy.

1. BASAL CONDITIONS :

(i) (a) *Dhaincha*—Paddy—*Paira* Gram, (b) *Dhaincha*. (c) 20 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy loam. (b) N.A. (iii) 17, 24.6.1954, 1.7.1954/22 to 25.7.1954. (iv) (a) *Dhaincha* buried by Punjab plough and field prepared by country plough. (b) N.A. (c) 7 to 10 srs./ac. (d) and (e) As per treatments. (v) 20 lb./ac. of P_2O_5 as Super at puddling, 20 lb./ac. of N as A/S at puddling and 20 lb./ac. of N as A/S 3 weeks after transplanting. G.M. (*dhaincha*) at 4254 lb./ac. (vi) BK—36 (BR—7, late). (vii) Irrigated. (viii) 3 weedings after transplanting. (ix) 41.69". (x) 16, 18.12.1954.

2. TREATMENTS '

All combinations of (1), (2) and (3)

(1) 3 spacings : $S_1=6'' \times 6''$, $S_2=6'' \times 10''$ and $S_3=10'' \times 10''$.
(2) 3 ages of seedlings : $T_1=3$, $T_2=4$ and $T_3=5$ weeks old.
(3) No. of seedlings/hole : $L_1=2$, $L_2=4$ and $L_3=6$.

3. DESIGN :

(i) 3^3 confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) N.A. (iii) 2. (iv) (a) N.A. (b) 43'10"×6'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1953—contd. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2447 lb./ac. (ii) 353.95 lb./ac. (iii) Only interaction S×T is significant. (iv) Av. yield of grain in lb./ac.

	T_1	T_2	T_3	Mean	L_1	L_2	L_3
S_1	2572	2317	2635	2508	2635	2490	2400
S_2	2602	2598	2333	2511	2438	2360	2735
S_3	2022	2548	2395	2322	2277	2407	2281
Mean	2399	2488	2454	2447	2450	2419	2472
L_1	2372	2512	2465				
L_2	2455	2360	2441				
L_3	2369	2591	2455				

S.E. of any marginal mean = 83.4 lb./ac.
S.E. of body of any table = 144.5 lb./ac.

Crop :- Paddy. **Ref :- Bh. 55(75).**
Site :- Agri. Res. Instt., Sabour. **Type :- 'C'.**

Object :—To study the effect of different combinations of spacing, age and no. of seedlings per hole on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—*Paira* Gram—*Dhaincha*—Paddy. (b) *Dhaincha.* (c) 20 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy loam. (b) N.A. (iii) 18, 25.6.1955 and 2.7.1955/24, 25.7.1955. (iv) (a) *Dhaincha* buried by Punjab plough and field prepared by country plough. (b) Japanese method. (c) 7 to 10 srs./ac. (d) and (e) As per treatments. (v) 40 lb./ac. of N as A/S, 40 lb./ac. of P_2O_5 as Super, *dhaincha* at 8168 lb./ac. (vi) BK—36 (BR—7, late). (vii) Irrigated. (viii) Hand weeding. (ix) 32.36". (x) 6.12.1955.

2. TREATMENTS :

Same as in expt. no. 54(44) on page 159.

3. DESIGN :

(i) 3^3 confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) N.A. (iii) 1. (iv) (a) N.A. (b) 43′10″×6′. (v) Nil. (vi) Yes.

4. GENERAL :

Same as in expt. no. 54(44) on page 159.

5. RESULTS :

(i) 3220 lb./ac. (ii) 469.5 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	T_1	T_2	T_3	Mean	L_1	L_2	L_3
S_1	3361	2892	3275	3157	3157	3178	3192
S_2	3399	3602	3099	3367	3382	3043	3675
S_3	2533	3388	3430	3117	2933	3099	3319
Mean	3097	3294	3268	3220	3157	3107	3395
L_1	2892	3313	3268				
L_2	2981	3319	3019				
L_3	3420	3250	3516				

S.E. of any marginal mean = 156.5 lb./ac.
S.E. of body of any table = 271.1 lb./ac.

* * *

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 56(73).**
Site :- Agri. Res. Instt., Sabour. **Type :- 'C'.**

Object :—To study the effect of different combinations of spacing, age and no. of seedlings per hole on Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Dhaincha* at 20 srs./ac. (c) 20 lb./ac. of N as A/S. (ii) (a) Clayey loam. (b) N.A. (iii) 13 to 27.6.1959/18, 19.7.1956. (iv) (a) 3 ploughings followed by beaming. (b) Japanese method. (c) 7 to 10 srs./ac. (d) and (e) As per treatments (v) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super, ½ before transplanting and ½ three weeks later. Buried *dhaincha* before transplanting. (vi) BK—36 (late). (vii) Unirrigated. (viii) 3 hoeings and weedings. (ix) 54.00". (x) 8 to 10.12.1956.

2. TREATMENTS :

Same as in expt. no. 54(44) on page 159.

3. DESIGN :

(i) 3^3 confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) 66′×43′10″. (iii) 2. (iv) (a) 43′10″×7′6″. (b) 41′10″×4′. (v) Nil. (vi) Yes.

4. GENERAL :

Same as in expt. no. 54(44) on page 159.

5. RESULTS :

(i) 2936 lb./ac. (ii) 327.6 lb./ac. (iii) Main effect of L is significant. No other effect is significant. (iv) Av. yield of grain in lb./ac.

	T_1	T_2	T_3	Mean	L_1	L_2	L_3
S_1	2812	2877	2836	2842	3058	2932	2535
S_2	2769	3240	3048	3019	3284	2945	2828
S_3	2869	2969	2999	2946	3018	2923	2896
Mean	2817	3029	2961	2936	3120	2933	2753
L_1	2964	3313	3083				
L_2	2706	3020	3073				
L_3	2779	2752	2728				

S.E. of any marginal mean = 77.2 lb./ac.
S.E. of body of any table = 133.8 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 57(31).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'C'.**

Object :—To study the effect of different combinations of spacing, age and no. of seedlings/hole on Paddy.

1. BASAL CONDITIONS :

(i) (a) Paddy—Gram—*Dhaincha*—Paddy. (b) *Dhaincha*. (c) 20 lb./ac. of N as A/S. (ii) (a) Clayey loam. (b) N.A. (iii) 13, 20, 27.6.1957/18 to 20.7.1959. (iv) (a) 3 ploughings followed by beaming. (b) Japanese method. (c) 7 to 15 srs./ac. (d) and (e) As per treatments. (v) *Dhaincha* buried before transplanting. 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super, ½ before transplanting and ½ three weeks after transplanting. (vi) BK—36 (late). (vii) Irrigated. (viii) 3 hoeings and 3 weedings. (ix) 23.60". (x) 9.12.1957 and 10.12.1957.

2. TREATMENTS :

Same as in expt. no. 54(44) on page 159.

3. DESIGN :

(i) 3^3 confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) 135'6"×66'. (iii) 2. (iv) (a) 43'10"×6'. (b) 42'2"×5'. (v) One line alround. (vi) Yes.

4. GENERAL :

(i) Lodging in some plots. (ii) Nil. (iii) Dates of germination and flowering and grain yield. (iv) (a) 1953—1958. (b) No. (c) Nil. (v) (a) Patna and Bikramganj. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1116 lb./ac. (ii) 176.1 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	T_1	T_2	T_3	Mean	L_1	L_2	L_3
S_1	1120	1144	1178	1147	1158	1216	1068
S_2	1099	1225	952	1092	1079	1038	1159
S_3	1084	1118	1121	1108	1092	1120	1111
Mean	1101	1162	1084	1116	1110	1125	1113
L_1	1092	1205	1032				
L_2	1130	1125	1120				
L_3	1080	1058	1100				

S.E. of any marginal mean = 41.5 lb./ac.
S.E. of body of any table = 71.9 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 58(6).**
Site :- Agri. Res. Instt., Sabour. **Type :- 'C'.**

Object :—To study the effect of different combinations of spacing, age and no. of seedlings/hole on Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Oats. (c) N.A. (ii) (a) Clay loam. (b) N.A. (iii) 13, 20, 27.6.1958/27 to 29.7.1958. (iv) (a) 3 ploughings followed by beaming. (b) Line sowing. (c) 7 to 10 srs./ac. (d) and (e) As per treatments. (v) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super at the time of sowing. (vi) BK—36 (late). (vii) Irrigated. (viii) 3 hoeings with Japanese hoe. (ix) 33.26″. (x) 27 to 29.7.1958.

2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 3 spacings : $S_1=6'' \times 6''$, $S_2=6'' \times 10''$ and $S_3=10'' \times 10''$.
(2) 3 ages of seedlings : $T_1=4$, $T_2=5$ and $T_3=6$ weeks old.
(3) No. of seedlings/hole : $L_1=2$, $L_2=4$ and $L_3=6$.

3. DESIGN :

(i) 3^3 confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) 66′×43′10″. (iii) 2. (iv) (a) and (b) 43′10″×6′. (v) Nil. (vi) Yes.

4. GENERAL :

Same as in expt. no. 54(44) on page 159.

5. RESULTS :

(i) 3033 lb./ac. (ii) 290 lb./ac. (iii) Main effect of S and T and interactions S×T and T×L are significant. iv) Av. yield of grain in lb./ac.

	T_1	T_2	T_3	L_1	L_2	L_3	Mean
S_1	3030	2861	2602	3057	2947	2488	2831
S_2	3141	3002	2733	3178	2699	2999	2959
S_3	3154	3492	3282	3213	3265	3451	3309
Mean	3108	3118	2872	3149	2970	2979	3033
L_1	3102	3161	3185				
L_2	3230	2871	2809				
L_3	2992	3323	2622				

S.E. of any marginal mean = 68.3 lb./ac.
S.E. of body of any table = 118.4 lb./ac.

Crop :- Paddy. **Ref :- Bh. 54(41).**
Site :- Agri. Res. Instt., Sabour. **Type :- 'C'.**

Object :—To study whether lodging can be checked by topping for Paddy crop.

1. BASAL CONDITIONS :

(i) (a) G.M.(*dhaincha*)—Paddy. (b) *Dhaincha* (c) 20 lb./ac. of P_2O_5 as Super. (ii) Sandy loam. (b) N.A. (iii) 17.6.1954/22.7.1954. (iv) (a) *Dhaincha* buried by Punjab plough and field prepared by country plough. (b) Japanese method. (c) 7 srs./ac. (d) 12″×12″. (e) 2 to 3. (v) *Dhaincha* at 2552 lb./ac. 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super in two equal doses. (vi) BK—36 (BR—7, late). (vii) Unirrigated. (viii) Weeding by rotary hoe. (ix) 41.69″. (x) 21.12.1954.

2. TREATMENTS :

4 toppings : T_0=Control (no topping), T_1=Topped on 1st September 1954, T_2=Topped on 10th September 1954 and T_3=Topped on 20th September 1954.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) and (b) 32′×10′. (v) No. (vi) Yes.

4. GENERAL :

(i) Good. (ii) No. (iii) Measurement of height of plants, weight of straw and grain. (iv) (a) 1954—1958. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1770 lb./ac. (ii) 128.4 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_0	T_1	T_2	T_3
Av. yield	1985	1740	1713	1643

S.E./mean = 52.4 lb./ac.

Crop :- Paddy. **Ref :- Bh. 55(72).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'C'.**

Object :—To study whether lodging can be checked by topping for Paddy crop.

1. BASAL CONDITIONS :

(i) (a) G.M.—(*dhaincha*)—Paddy. (b) *Dhaincha.* (c) 20 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy loam. (b) N.A. (iii) 19.6.1955/27.7.1955. (iv) (a) *Dhaincha* buried by Punjab plough and field prepared by country plough. (b) Japanese method. (c) 7 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) G.M. *dhaincha* at 6125 lb./ac. +60 lb./ac. of N as A/S and 40 lb./ac. of P_2O_5 as Super in two equal doses first at puddling and second three weeks after transplanting. (vi) BK—36 (BR—7, late). (vii) Unirrigated. (viii) Weeding by rotary hoe. (ix) 32.36″. (x) 3.12.1955.

2. TREATMENTS :

Same as in expt. no. 54(41) on page 162.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) and (b) 31′8″×9′2″. (v) No. (vi) Yes.

4. GENERAL :

Same as in expt no. 54(41) on page 162.

5. RESULTS :

(i) 2800 lb./ac. (ii) 286.3 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_0	T_1	T_2	T_3
Av. yield	3012	2704	2872	2612

S.E./mean = 116.9 lb./ac.

Crop :- Paddy *(Kharif).* **Ref :- Bh. 56(70).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'C'.**

Object .—To study whether lodging can be checked by topping for Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Dhaincha* at 20 srs./ac. (c) Nil. (ii) (a) Clayey loam. (b) N.A. (iii) 15.6.1956/23.7.1956. (iv) (a) 3 ploughings followed by beaming. (b) Line planting. (c) 7 to 10 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) *Dhaincha* buried before transplanting, 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super, ½ before transplanting and ½ three weeks later. (vi) BK—88 (medium) and BK—36 (late). (vii) Irrigated. (viii) 3 hoeings and 3 weedings. (ix) 54.00″. (x) 15.12.1956 for BK—88, 22.12.1956 for BK—36.

2. TREATMENTS :

Same as in expt. no. 54(41) on page 162.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6 for each variety. (iv) (a) N.A. (b) 31′8″×4′2″. (v) Nil. (vi) Yes.

4. GENERAL :

(i) No lodging. (ii) Nil. (iii) Dates of germination and flowering, disease incidence, paddy yield and straw weight. (iv) 1954—1958. (b) No. (c) Nil. (v) and (vi) Nil. (vii) The expt. was conducted with two different varieties and the results are given separately for each.

5. RESULTS :

Variety BK—88.

(i) 2557 lb./ac. (ii) 287.2 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_0	T_1	T_2	T_3
Av. yield	2985	2586	2400	2256

S.E./mean = 117.2 lb./ac.

Variety BK—36.

(i) 2054 lb./ac. (ii) 349.7 lb./ac. (lii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_0	T_1	T_2	T_3
Av. yield	2435	2177	1843	1761

S.E./mean = 142.8 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 57(29).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'C'.**

Object :—To study whether lodging can be checked by topping for Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Gram. (c) Nil, (ii) (a) Clayey loam. (b) N.A. (iii) 17 to 22.6.1957/6 8.1957. (iv) (a) 4 ploughings followed by beaming. (b) Line planting. (c) 7 to 10 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. ½ manure at planting and ½ at the time of flowering. (vi) BK—36 (late) ; BK—88 (medium) ; BK—115 (early). (vii) Irrigated. (viii) Hoeing by rotary hoe and weeding. (ix) 23.60″. (x) 25.11.1957 and 5, 6.12.1957.

2. TREATMENTS :

Same as in expt. no. 54(41) on page 162.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6 for each variety. (iv) (a) 30′×4′2″. (b) 28′4″×2′6″. (v) N.A. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Nil. (iii) Biometric observations and grain yield. (iv) (a) 1954—1958. (b) No. (c) Nil. (v) (a) Kanke, Bikramganj and Patna. (b) Nil. (vi) Nil. (vii) The experiment was conducted with three different varieties and the results are given separately for each.

5. RESULTS :

Variety BK—36.

(i) 2382 lb./ac. (ii) 461.5 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_0	T_1	T_2	T_3
Av. yield	2550	2364	2313	2301

S.E./mean = 188.4 lb./ac.

Variety BK—88.

(i) 2237 lb./ac. (ii) 328.0 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_0	T_1	T_2	T_3
Av. yield	2433	2230	2191	2095

S.E./mean = 133.9 lb./ac.

Variety BK—115.

(i) 1842 lb./ac. (ii) 360.8 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_0	T_1	T_2	T_3
Av. yield	1775	1941	1878	1775

S.E./mean = 147.3 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 58(12).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'C'.**

Object :—To study whether lodging can be checked by topping for Paddy crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Clay loam. (b) N.A. (iii) 15.6.1958/11.8.1958. (iv) (a) 2 ploughings followed by beaming. (b) Line planting. (c) 7 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super, ½ before transplanting and ½ at the time of earthing up. (vi) BK—36 (late). (vii) Irrigated. (viii) One earthing and 2 hoeings by Japanese hoe. (ix) 33.26″. (x) 13.12.1958.

2. TREATMENTS :

Same as in expt. no. 54(41) on page 162.

3. DESIGN :

Same as in expt. no. 57(29) on page 164.

4. GENERAL :

Same as in expt. no. 54(41) on page 162.

5. RESULTS :

i) 2098 lb./ac. (ii) 411 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_0	T_1	T_2	T_3
Av. yield	1985	2274	2075	2056

S.E./mean = 167.8 lb./ac.

Crop :- Paddy. **Ref :- Bh. 55(71).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'C'.**

Object :—To find out the effect of time of sowing on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) *Dhaincha*—Paddy. (b) *Dhaincha.* (c) 40 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy loam. (b) N.A. (iii) As per treatments. (iv) (a) N.A. (b) Japanese method. (c) 7 srs./ac. (d) 9"×9". (e) 2 to 3. (v) 80lb./ac. of N as A/S+80 lb./ac. of P_2O_5 as Super+80 lb./ac. of K_2O as Mur. Pot. (vi) 498—2A (BR—8, late *Aman*). (vii) Irrigated. (viii) Weeding by rotary hoe. (ix) 32.36". (x) 18.12.1955.

2. TREATMENTS :

5 dates of sowing/transplanting : D_1=19.6.1955/12.7.1955, D_2=19.6.1955/30.7.1955, D_3=19.6.1955/20.8.1955, D_4=12.7.1955/30.7.1955. and D_3=12.7.1955/20.8.1955.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 2. (iv) (a) 66'9"×22'6". (b) 65'3"×21'. (v) 9"×9". (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Biometric observations and grain yield (iv) (a) 1955—contd. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 2390 lb./ac. (ii) 201.7 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	D_1	D_2	D_3	D_4	D_5
Av. yield	2549	2476	2176	2408	2341

S.E./mean = 142.6 lb./ac.

Crop :- Paddy ***(Kharif).*** **Ref :- Bh 56(68).**

Site :- Agri. Res. Stn., Sabour. **Type :- 'C'.**

Object :—To find out the effect of time of sowing on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Dhaincha.* (c) 40 lb./ac. of P_2O_5 as Super. (ii) (a) Loam. (b) N.A. (iii) As per treatments. (iv) (a) 2 ploughings followed by beaming. (b) Line transplanting. (c) 7 to 10 srs./ac. (d) 9"×9". (e) 2 to 3. (v) *Dhaincha* buried before transplanting. A/S at 40 lb./ac. of N and Super at 40 lb./ac. of P_2O_5. (vi) 498—2A (late). (vii) Irrigated. (viii) 3 hoeings and 3 weedings. (ix) 45.10". (x) 25, 26.12.1956.

2. TREATMENTS :

5 dates of sowing/transplanting : D_1=13.6.1956/12.7.1956, D_2=13.6.1956/30.7.1956, D_3=13.6.1956/18.8.1956, D_4=8.7.1956/30.7.1956 and D_5=8.7.1956/18.8.1956.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 2. (iv) (a) N.A. (b) 75'×23'9". (v) 1 line alround. (vi) Yes.

4. GENERAL :

Same as in expt. no. 55(71) above.

5. RESULTS :

(i) 1898 lb./ac. (ii) 531.5 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	D_1	D_2	D_3	D_4	D_5
Av. yield	1878	2404	1919	1596	1697

S.E./mean = 375.8 lb./ac.

Crop :- Paddy. **Ref :- Bh. 59(208).**

Site :- Bot. Sub-Stn., Bikramganj. **Type :- 'CV'.**

Object :—To compare and study the yield of Aus and Aman varieties of Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Bikramganj. (iii) 16.6.1959/21, 22.7.1959. (iv) (a) 4 ploughings by *desi* plough. (b) Japanese method. (c) As per treatments. (d) 10″×10″. (e) 2 to 3. (v) Nil. (vi) As per treatments. (vii) Irrigated. (viii) 1 weeding and hoeing. (ix) and (x) N.A.

2. TREATMENTS :

1. *Sona* at 20 srs./ac.
2. *Sona* at 30 srs./ac.
3. *Sona*+498—2A at 20 srs./ac. in 1 : 1 ratio.
4. *Sona*+498—2A at 30 srs./ac. in 2 : 1 ratio.
5. *Sona*+498—2A at 40 srs./ac. in 3 : 1 ratio.
6. *Sona*+498—2A at 30 srs./ac. in 1 : 1 ratio.
7. *Sona*+498—2A at 40 srs./ac. in 1 : 1 ratio.
8. 498—2A at 20 srs./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 42′×12′. (b) 40′×10′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) Nil. (iii) Grain yield. (iv) (a) to (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 752 lb./ac. (ii) 179.4 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5	6	7	8
Av. yield	483	413	742	665	411	782	794	1729

S.E./mean = 89.7 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 58(295).**

Site :- Bot. Sub-Stn., Bikramganj. **Type :- 'CV'.**

Object :—To find out the effect of different dates of transplanting on late Paddy varieties.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Bikramganj. (iii) As per treatments. (iv) (a) 4 ploughings by *desi* plough. (b) Japanese method. (c) 10 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super before transplanting. (vi) As per treatments. (vii) Unirrigated, (viii) 2 intercultures. (ix) 30.80″. (x) 15, 16.12.1958.

2. TREATMENTS :

Main-plot treatments :

4 dates of transplanting : D_1=15th July, D_2=1st August, D_3=15th August and D_4=1st September, 1958.

Sub-plot treatments :

3 varieties : V_1=BK—36, V_2=498—2A and V_3=818—3A.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/block ; 3 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a) 12′×22′. (b) 10′×20′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1958—1961. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2046 lb./ac. (ii) (a) 737.3 lb./ac. (b) 533.7 lb./ac. (iii) N effect is highly significant. D effect is significant. Interaction is not significant. (iv) Av. yield of grain in lb./ac.

	D_1	D_2	D_3	D_4	Mean
V_1	3426	2688	2934	2231	2820
V_2	2337	1405	2179	1564	1871
V_3	1581	1441	1493	1265	1445
Mean	2448	1845	2202	1687	2046

S.E. of difference of two
1. D marginal means = 245.8 lb./ac.
2. V marginal means = 154.1 lb./ac.
3. V means at the same level of D = 308.1 lb./ac.
4. D means at the same level of V = 351.7 lb./ac.

Crop :- Paddy ***(Kharif).*** **Ref :- Bh. 59(222).**

Site :- Bot. Sub-Stn., Bikramganj. **Type :- 'CV'.**

Object :—To find out the effect of different dates of transplanting on late Paddy varieties.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Bikramganj. (iii) As per treatments. (iv) (a) 4 ploughings. (b) Japanese method. (c) 10 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (vi) As per treatments. (vii) Unirrigated. (viii) 2 hoeings and weedings. (ix) 24.65″. (x) 21 and 22.12.1959.

2. TREATMENTS :

Main-plot treatments :

5 dates of transplanting : D_1=15th July, D_2=1st August, D_3=15th August, D_4=1st September and D_5=15th September 1959..

Sub-plot treatments :

3 varieties : V_1=BK—36, V_2=498—2A and V_3=818—3A.

3. DESIGN:

(i) Split-plot. (ii) (a) 5 main-plots/block ; 3 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a) 12′×22′. (b) 10′×20′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

Same as in expt. no. 58(295) on page 167..

5. RESULTS :

(i) 2561 lb./ac. (ii) (a) 445.4 lb./ac. (b) 310.7 lb./ac. (iii) D and V effects are highly significant. Interaction is not significant. (iv) Av. yield of grain in lb./ac.

	D_1	D_2	D_3	D_4	D_5	Mean
V_1	2017	3194	3250	3362	3026	2970
V_2	2185	2465	2820	3231	2372	2615
V_3	1531	1830	2521	2447	2166	2099
Mean	1911	2496	2864	3013	2521	2561

S.E. of difference of two
1. D marginal means = 210.0 lb./ac.
2. V marginal means = 113.5 lb./ac.
3. V means at the same level of D = 253.7 lb./ac.
4. D means at the same level of V = 294.9 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 58(296).**

Site :- Bot. Sub-Stn., Bikramganj. **Type :- 'CV'.**

Object :—To find out the effect of different dates of transplanting on Paddy varieties.

1 BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Bikramganj. (iii) 15.6.1959/As per treatments. (iv) (a) 3 ploughings by *desi* plough. (b) Japanese method. (c) 10 srs./ac. (d) 10″×10″ (e) 2 to 3. (v) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super before planting. (vi) As per treatments. (vii) Irrigated. (vii) 2 weedings and 2 hoeings. (ix) 30.80″. (v) 13, 14.12.1958.

2. TREATMENTS :

Main-plot treatments :

4 dates of transplanting : D_1=15th July, D_2=1st August, D_3=15th August and D_4=1st September 1958.

Sub-plot treatments :

2 varieties : V_1=BK—16 and V_2=BK—88.

3. DESIGN:

(i) Split-plot. (ii) (a) 4 main-plots/block ; 2 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 22′×12′. (b) 20′×10′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) to (c) N.A. (v) (a) Pusa and Sabour. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2950 lb./ac. (ii) (a) 664.3 lb./ac. (b) 665.6 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	D_1	D_2	D_3	D_4	Mean
V_1	3417	3151	2773	2535	2969
V_2	3319	2801	3361	2241	2931
Mean	3368	2976	3067	2388	2950

S.E. of difference of two

1. D marginal means = 332.2 lb./ac.
2. V marginal means = 235.3 lb./ac.
3. V means at the same level of D = 470.7 lb./ac.
4. D means at the same level of V = 470.2 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 59(223).**

Site :- Bot. Sub-Stn., Bikramganj. **Type :- 'CV'.**

Object :—To find out the effect of different dates of transplanting on Paddy varieties.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Bikramganj. (iii) As per treatments. (vi) (a) 4 ploughings. (b) Japanese method. (c) 10 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) 40 lb./ac. of N a. A/S+40 lb./ac. of P_2O_5 as Super. (vi) As per treatments. (vii) Unirrigated. (viii) 2 weedings and hoeings. (ix) 24.65″. (x) 1, 2.12.1959.

2. TREATMENTS and 3. DESIGN :

Same as expt. no. 58(296) above.

4. GENERAL :

Same as in expt. no. 58(295) on page 167.

5. RESULTS :

(i) 2828 lb./ac. (ii) (a) 293.9 lb./ac. (b) 361.7 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	D_1	D_2	D_3	D_4	Mean
V_1	2885	3152	2913	2605	2889
V_2	2973	2928	2773	2591	2766
Mean	2829	3040	2843	2598	2828

S.E. of difference of two

1. D marginal means = 147.0 lb./ac.
2. V marginal means = 127.9 lb./ac.
3. V means at the same level of D = 255.8 lb./ac.
4. D means at the same level of V = 233.0 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 58(294).**

Site :- Bot. Sub-Stn., Bikramganj. **Type :- 'CV'.**

Object :—To find out the effect of different dates of transplanting on yield of early Paddy varieties.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Gram. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Bikramganj. (iii) 15.6.1959/ As per treatments. (iv) (a) 4 ploughings by *desi* plough. (b) Japanese method. (c) 10 srs./ac. (d) 1′×1′. (e) 2 to 3. (v) 20 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super. (vi) As per treatments. (vii) Irrigated. (viii) 2 weedings by *khurpi*. (ix) 30.80″. (x) 23.11.1958.

2. TREATMENTS

Main-plot treatments :

4 dates of transplanting : D_1=15th July, D_2=1st August, D_3=15th August and D_4=1st September 1958.

Sub-plot treatments:

3 varieties : V_1=BK—115, V_2=BK—141 and V_3=2206—B.

3. DESIGN

Same as in expt. no. 58(295) on page 167.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1958—1960. (b) No. (c) Nil. (v) (a) Sabour, and Kanke. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2869 lb./ac. (ii) 646.3 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	D_1	D_2	D_3	D_4	Mean
V_1	2726	2744	3136	2688	2821
V_2	3248	3118	3024	2614	3001
V_3	2670	3379	2912	2184	2786
Mean	2881	3080	3024	2495	2869

S.E. of difference of two

1. D marginal means = 304.6 lb./ac.
2. V marginal means = 271.7 lb./ac.
3. V means at the same level of D = 543.7 lb./ac.
4. D means at the same level of V = 538.2 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 59(224).**

Site :- Bot. Sub-Stn., Bikramganj. **Type :- 'CV'.**

Object :—To find out the effect of different dates of transplanting on yield of Paddy varieties.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Bikaramganj. (iii) As per treatments. (iv) (a) 4 ploughings. (b) Japanese method. (c) 10 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (vi) As per treatments. (vii) Unirrigated. (viii) 2 weedings and hoeings. (ix) 24.65″. (x) 24, 25.11.1959.

2. TREATMENTS:

Same as in expt. no. 58(294) on page 170.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 58(295) on page 167.

5. RESULTS :

(i) 2837 lb./ac. (ii) (a) 454.4 lb./ac. (b) 387.2 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	D_1	D_2	D_3	D_4	Mean
V_1	2745	3026	2708	2839	2830
V_2	2353	2876	2801	2652	2671
V_3	2914	3642	3063	2428	3012
Mean	2671	3181	2857	2640	2837

S.E. of difference of two

1. D marginal means = 214.2 lb./ac.
2. V marginal means = 158.1 lb./ac.
3. V means at the same level of D = 316.2 lb./ac.
4. D means at the same level of V = 335.4 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 58(70).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'CV'.**

Object :—To find out the effect of different dates of transplanting on the yield of Paddy varieties.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) G.M. crop. (c) Nil. (ii) (a) Red laterite. (b) Refer soil analysis, Kanke. (iii) 26.6.1958/ As per treatments. (iv) (a) 3 ploughings followed by planking. (b) Japanese method. (c) 7 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) 20 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super at the time of puddling and 20 lb./ac. of N as A/S 3 weeks after transplanting. (vi) As per treatments. (vii) Unirrigated. (viii) Hoeing and weeding. (ix) 40.39″. (x) 23.10.1959.

2. TREATMENTS :

Same as in expt. no. 58(294) on page 170.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/block ; 3 sub-plots/main-plot. (b) 69′×56′6″. (iii) 3. (iv) (a) 21′8″×11′8″. (b) 20′×10′. (v) One row alround. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Attack of *gundli* bug—no control measures were taken. (iii) Grain and straw yield. (iv) (a) 1958—1961. (b) No. (c) Nil. (v) (a) Patna and Sabour. (b) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 2413 lb./ac. (ii) (a) 124 lb./ac. (b) 210 lb./ac. (iii) D and V effects are highly significant. Interaction D×V is significant. (iv) Av. yield of grain in lb./ac.

	D_1	D_2	D_3	D_4	Mean
V_1	2203	2241	2194	2026	2166
V_2	2843	2595	2362	2231	2508
V_3	3109	2651	2353	2147	2565
Mean	2718	2496	2303	2135	2413

S.E. of difference of two
1. D marginal means = 58.2 lb./ac.
2. V marginal means = 85.8 lb./ac.
3. V means at the same level of D = 171.5 lb./ac.
4. D means at the same level of V = 151.6 lb./ac.

Crop :- Paddy (*Kharif*). **Ref :- Bh. 59(33).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'CV'.**

Object :—To find out the effect of different dates of transplanting on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) G.M. crops. (c) Nil. (ii) (a) Sandy loam, (b) Refer soil analysis, Kanke. (iii) 17.6.1959/ As per treatments. (iv) (a) 3 ploughings. (b) Japanese method. (c) 7 srs./ac. (d) 10"×10". (e) 2 to 3. (v) 20 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super at the time of puddling ; 20 lb./ac. of N as A/S 3 weeks after transplanting. (vi) As per treatments. (vii) Unirrigated. (viii) Hoeing and weeding. (ix) 44.4". (x) 23 to 30.11.1959.

2. TREATMENTS :

Same as in expt. no. 58(294) on page 170.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/block; 3 sub-plots/main-plot. (b) 68'×51'2". (iii) 3. (iv) (a) 21'8"×11'8". (b) 20'×10'. (v) One row alround. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1958—1961. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1984 lb./ac. (ii) (a) 555.5 lb./ac. (b) 430.1 lb./ac. (iii) D effect is significant. Interaction V×D is highly significant. (iv) Av. yield of grain in lb./ac.

	D_1	D_2	D_3	D_4	Mean
V_1	2080	2409	1674	1568	1933
V_2	2082	1932	2445	1157	1904
V_3	2454	1559	3108	1338	2114
Mean	2205	1967	2409	1353	1984

S.E. of difference of two
1. D marginal means = 261.8 lb./ac.
2. V marginal means = 175.6 lb./ac.
3. V means at the same level of D = 351.1 lb./ac.
4. D means at the same level of V = 412.6 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 59(35).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'CV'.**

Object :—To find out the effect of different dates of transplanting on the yield of late Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) G.M. crop. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Kanke. (iii) Sown on 17.6 1959. Transplanted as per treatments. (iv) (a) 3 ploughings and planking. (b) Japanese method. (c) 7 srs./ac. (d) 10″×10″. (e) N.A. (v) 20 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super at the time of puddling. 20 lb./ac. of N as A/S 3 weeks after transplanting. (vi) As per treatments. (vii) Unirrigated. (viii) Hoeing and weeding. (ix) 44.4″. (x) 14 to 21.12.1959.

2. TREATMENTS :

Same as in expt. no. 59(222) on page 168.

3. DESIGN :

(i) Split-plot. (ii) (a) 5 main-plots/block ; 3 sub-plots/main-plot. (b) 84′4″×68′. (iii) 3. (iv) (a) 21′8″×11′8″. (b) 20′×10′. (v) One row alround. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1959—N.A. (b) No. (c) Nil. (v) (a) Sabour and Patna. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1009 lb./ac. (ii) (a) 735 lb./ac. (b) 537 lb./ac. (iii) Only the main effect of D is highly significant. (iv) Av. yield of grain in lb./ac.

	D_1	D_2	D_3	D_4	D_5	Mean
V_1	1400	1651	1568	1148	139	1181
V_2	1624	1331	1568	615	153	1058
V_3	1785	853	1008	267	27	788
Mean	1603	1278	1381	677	106	1009

S.E. of difference of two

1. D marginal means = 346.8 lb./ac.
2. V marginal means = 196.0 lb./ac.
3. V means at the same level of D = 438.2 lb./ac.
4. D means at the same level of V = 498.3 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 59(36).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'CV'.**

Object :—To find out the effect of different dates of transplanting on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) G.M. crop. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Kanke. (iii) 17.6.1959/ as per treatments. (iv) (a) 3 ploughings and planking. (b) Japanese method. (c) 7 srs./ac. (d) 10″×10″. (e) N.A. (v) 20 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super at the time of puddling. Second dose of N at 20 lb./ac. 3 weeks after transplanting. (vi) As per treatments. (vii) Unirrigated. (viii) Hoeing and weeding. (ix) 44.4″. (x) 27.11.1959 to 7.12.1959.

2. TREATMENTS :

Same as in expt. no. 58(296) on page 169.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/block ; 2 sub-plot/main-plot. (b) 44′10″×51′2″. (iii) 4. (iv) (a) 21′8″×11′8″. (b) 20′×10′. (v) One row alround. (vi) Yes.

4. GENERAL :

Same as in expt. no. 59(35) on page 173.

5. RESULTS :

(i) 1978 lb./ac. (ii) (a) 731 lb./ac. (b) 742 lb./ac. (iii) D effect is highly significant. V effect is significant. interaction V×D is not significant. (iv) Av. yield of grain in lb./ac.

	D_1	D_2	D_3	D_4	Mean
V_1	1981	2031	2295	332	1660
V_2	2694	3283	2835	370	2296
Mean	2338	2657	2565	351	1978

S.E. of difference of two

1. D marginal means = 365.8 lb./ac.
2. V marginal means = 262.3 lb./ac.
3. V means at the same level of D = 524.6 lb./ac.
4. D means at the same level of V = 520.9 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 58(291).**

Site :- Agri. Res. Instt., Patna. **Type :- 'CV'.**

Object :—To study the effect of different dates of transplanting on the yield of early Paddy varieties.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Heavy clay. (b) Refer soil analysis, Patna. (iii) As per treatments. (iv) (a) 5 ploughings by *desi* plough. (b) Japanese method. (c) 20 srs./ac. (d) 10"×10". (e) 2 to 3. (v) Nil. (vi) As per treatments. (vii) Irrigated. (viii) 4 weedings by rotary hoe. (ix) 21.44". (x) 18.11.1958.

2. TREATMENTS :

Same as in expt. no 58(294) on page 170.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/block ; 3 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a) 21'8"×11'8". (b) 20'×10'. (v) One row on each side. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) 1958—1960. (b) Yes. (c) Nil. (v) (a) Patna, Sabour, Pusa, Kanke and Bikramganj. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2781 lb./ac. (ii) (a) 367.4 lb..ac. (b) 532.4 lb./ac. (iii) D effect is highly significant and V effect is significant. Interaction D×V is not significant. (iv) Av. yield of grain in lb./ac.

	D_1	D_2	D_3	D_4	Mean
V_1	3784	3104	2360	2450	2925
V_2	2550	3140	2160	1797	2412
V_3	3684	3721	2505	2114	3006
Mean	3339	3322	2342	2120	2781

S.E. of difference of two

1. D marginal means = 173.2 lb./ac.
2. V marginal means = 217.3 ib./ac.
3. V means at the same level of D = 434.7 lb./ac.
4. D means at the same level of V = 394.9 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 58(290).**

Site :- Agri. Res. Instt., Patna. **Type :- 'CV'.**

Object :—To find out the effect of different dates of transplanting on the yield of late varieties of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Dhaincha.* (c) Nil. (ii) (a) Heavy clay. (b) Refer soil analysis, Patna. (iii) As per treatments. (iv) (a) 5 ploughings by *desi* plough. (b) Japanese method. (c) 20 lb./ac. (d) 10″×10″. (e) 2 to 3. (v) *Dhaincha* buried in soil. (vi) As per treatments. (vii) Irrigated. (viii) 2 weedings and 2 hoeings. (ix) 21.84″. (x) 11.12.1958.

2. TREATMENTS :

Same as in expt. no. 58(295) on page 167.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 58(291) on page 174.

5. RESULTS :

(i) 2439 lb./ac. (ii) (a) 521.6 lb./ac. (b) 390.1 lb./ac. (iii) Only V effect is highly significant. (iv) Av. yield of grain in lb./ac.

	D_1	D_2	D_3	D_4	Mean
V_1	3058	2686	2550	2568	2716
V_2	2704	2850	2786	1761	2525
V_3	2414	2260	1969	1961	2076
Mean	2725	2599	2435	1997	2439

S.E. of difference of two
1. D marginal means = 245.9 lb./ac.
2. V marginal means = 159.3 lb./ac.
3. V means at the same level of D = 318.5 lb./ac.
4. D means at the same level of V = 357.9 lb./ac.

Crop :- Paddy. **Ref :- Bh. 59(97).**

Site :- Agri. Res. Instt., Patna. **Type :- 'CV'.**

Object :—To study the effect of different dates of transplanting on the yield of late Paddy varieties.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Dhaincha.* (c) Nil. (ii) (a) Heavy clay. (b) Refer soil analysis, Patna. (iii) As per treatments. (iv) (a) 5 ploughings. (b) Japanese method. (c) 10 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) *Dhaincha.* (vi) As per treatments. (vii) Unirrigated. (viii) 2 weedings. (ix) N.A. (x) 17.12.1959.

TREATMENTS :

Same as in expt. no. 58(295) on page 167.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/block ; 3 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 20′×10′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1958—1960. (b) No. (c) Nil. (v) (a) Sabour. (b) N.A. (vi) Heavy rains on 17, 18.8.1959. (vii) Nil.

5. RESULTS :

(i) 2116 lb./ac. (ii) (a) 286.3 lb./ac. (b) 416.4 lb./ac. (iii) D and V effects are highly significant. Interaction D×V is significant. (iv) Av. yield of grain in lb./ac.

	D_1	D_2	D_3	D_4	Mean
V_1	2323	2482	1316	2033	2039
V_2	3503	2423	2645	2369	2735
V_3	2005	1593	1416	1284	1575
Mean	2610	2166	1792	1895	2116

S.E. of difference of two

1. D marginal means = 135.0 lb./ac.
2. V marginal means = 170.0 lb./ac.
3. V means at the same level of D = 340.0 lb./ac.
4. D means at the same level of V = 308.7 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 59(98).**

Site :- Agri. Res. Instt., Patna. **Type :- 'CV'.**

Object :—To find out the effect of different dates of transplanting on the yield of early Paddy varieties.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Heavy clay. (b) Refer soil analysis. Patna. (iii) As per treatments. (iv) (a) 5 ploughings. (b) Japanese method. (c) 20 lb./ac. (d) 10″×10″. (e) 2 to 3. (v) 40 lb./ac. of N as A/S+ 40 lb./ac. of P_2O_5 as Super at planting. (vi) As per treatments. (vii) Unirrigated. (viii) 3 weedings. (ix) N.A. (x) 25.11.1959.

2. TREATMENTS :

Same as in expt. no. 58(294) on page 170.

3. DESIGN :

Same as in expt. no. 58(291) on page 174.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1958—1960. (b) No. (c) Nil. (v) (a) Sabour. (b) N.A. (vi) Heavy rains on 17, 18.8.1959. (vii) Nil.

5. RESULTS :

(i) 2603 lb./ac. (ii) (a) 139.1 lb./ac. (b) 175.3 lb./ac. (iii) D and V effects are highly significant while interaction D×V is significant. (iv) Av. yield of grain in lb./ac.

	D_1	D_2	D_3	D_4	Mean
V_1	2695	2473	2459	2241	2467
V_2	3026	2496	3282	1874	2670
V_3	3203	2791	2759	1938	2673
Mean	2975	2587	2833	2018	2603

S.E. of difference of two

1. D marginal means = 65.6 lb./ac.
2. V marginal means = 71.6 lb./ac.
3. V means at the same level of D = 143.1 lb./ac.
4. D means at the same level of V = 134.0 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 58(182).**

Site :- Agri. Res. Instt., Patna. **Type :- 'CV'.**

Object :—To find out the effect of different dates of transplanting on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Dhaincha*. (c) Nil. (ii) (a) Heavy clay. (b) Refer soil analysis, Patna. (iii) As per treatments. (iv) 5 ploughings by *desi* plough. (b) Japanese method. (c) 20 lb./ac. (d) 10″×10″. (e) 2 to 3. (v) G.M. with *dhaincha*. (vi) As per treatments. (vii) Unirrigated. (viii) 4 weedings. (ix) 20.36″. (x) 9.12.1958.

2. TREATMENTS :

Main-plot treatments :
4 dates of transplanting : D_1= 15th July, D_2=1st August, D_3=15th August and D_4=1st September.

Sub-plot treatments :
2 varieties : V_1=BR—5 and V_2=BR—6.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/block ; 2 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 21⅜′×11⅜′. (b) 20′×10′. (v) One row on each side. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) 1958—1960. (b) No. (c) Nil. (v) (a) Sabour, Pusa, Kanke and Bikramganj. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2054 lb./ac. (ii) (a) 335.4 lb./ac. (b) 371.3 lb./ac. (iii) Only D effect is highly significant. (iv) Av. yield of grain in lb./ac.

	D_1	D_2	D_3	D_4	Mean
V_1	2214	2107	2392	1367	2020
V_2	2328	2271	2391	1358	2087
Mean	2271	2189	2392	1363	2054

S.E. of difference of two

1. D marginal means = 167.7 lb./ac.
2. V marginal means = 92.8 lb./ac.
3. V means at the same level of D = 185.7 lb./ac.
4. D means at the same level of V = 250.2 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref:- Bh. 59(124).**

Site :- Agri. Res. Instt., Patna. **Type :- 'CV'.**

Object :—To study the effect of different dates of transplanting on the yield of medium varieties of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Dhaincha* (G.M.). (c) Nil. (ii) (a) Heavy clay. (b) Refer soil analysis, Patna. (iii) As per treatments. (iv) (a) 5 ploughings. (b) Japanese method. (c) 10 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) G.M. with *dhaincha*. (vi) As per treatments. (vii) Unirrigated. (viii) 2 weeding and hoeings. (ix) N.A. (x) 9.12.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 58(182) above.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) 1958—1960. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) Heavy rain on 17, 18.8.1959. (vii) Nil.

5. RESULTS :

(i) 2305 lb./ac. (ii) (a) 293.2 lb./ac. (b) 249.3 lb./ac. (iii) Only D effect is significant. (iv) Av. yield of grain in lb./ac.

	D_1	D_2	D_3	D_4	Mean
V_1	2576	2310	2212	1994	2273
V_2	2603	2304	2259	2178	2336
Mean	2590	2307	2236	2086	2305

S.E. of difference of of two

1. D marginal means = 146.6 lb./ac.
2. V marginal means = 88.1 lb./ac.
3. V means at the same level of D = 176.3 lb./ac.
4. D means at the same level of V = 164.4 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 59(127).**

Site :- Agri. Res. Instt., Pusa. **Type :- 'CV'.**

Object :—To find out the effect of different dates of transplanting on the yield of early Paddy varieties.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) As per treatments. (iv) (a) 3 ploughings by *desi* plough. (b) Japanese method. (c) 7 srs./ac. (d) 10″ × 10″. (e) 2 to 3. (v) Nil. (vi) As per treatments. (vii) Irrigated. (viii) 2 weedings. (ix) 34.31″. (x) 23.11.1959 to 10.12.1959.

2. TREATMENTS :

Same as in expt. no. 58(294) on page 170.

3. DESIGN :

Same as ~~in~~ expt. no. 58(291) on page 174.

4 GENERAL :

(i) Good. (ii) Attack of Helminthosporium and *gundli* bug—BHC was dusted. (iii) Grain and straw yield. (iv) (a) 1958—N.A. (b) No. (c) Nil. (v) (a) Patna, Sabour and Kanke. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1718 lb./ac. (ii) (a) 286.3 lb./ac. (b) 300.3 lb./ac. (iii) D and V effects are highly significant. Interaction D × V is not significant. (iv) Av. yield of grain in lb./ac.

	D_1	D_2	D_3	D_4	Mean
V_1	1107	1609	1428	2401	1636
V_2	709	909	1155	2046	1205
V_3	2019	2601	2119	2519	2315
Mean	1278	1706	1567	2322	1718

S.E. of difference of two

1. D marginal means = 135.0 lb./ac.
2. V marginal means = 122.6 lb./ac.
3. V means at the same level of D = 245.2 lb./ac
4. D means at the same level of V = 241.4 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 59(126).**

Site :- Agri. Res. Instt., Pusa. **Type :- 'CV'.**

Object :—To find out the effect of different dates of transplanting on yield of Paddy varieties of medium duration.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) As per treatments. (iv) (a) 3 ploughings by *desi* plough. (b) Japanese method. (c) 7 srs./ac. (d) 10"×10". (e) 2 to 3. (v) Nil. (vi) As per treatments. (vii) Irrigated. (viii) 1 weeding by hand. (ix) 28.31". (x) 11.12.1959.

2. TREATMENTS :

Same as in expt. no. 58(296) on page 169.

3. DESIGN :

Same as in expt. no. 58(182) on page 177.

4. GENERAL :

(i) Good. (ii) Attack of Helminthosporium—no control measures were taken. (ii) Grain and straw yield. (iv) (a) 1958—N.A. (b) No. (c) Nil. (v) (a) Patna, Sabour and Kanke. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2192 lb./ac. (ii) (a) 490.4 lb./ac. (b) 327.5 lb./ac. (iii) Only interaction D×V is significant. (iv) Av. yield of grain in lb./ac.

	D_1	D_2	D_3	D_4	Mean
V_1	1948	2071	2030	3255	2326
V_2	2303	2187	1888	1853	2058
Mean	2126	2129	1959	2554	2192

S.E. of difference of two

1. D marginal means = 245.2 lb./ac.
2. V marginal means = 115.8 lb./ac.
3. V means at the same level of D = 231.6 lb./ac.
4. D means at the same level of V = 459.9 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 59(128).**

Site :- Agri. Res. Instt., Pusa. **Type :- 'CV'.**

Object :—To find out the effect of different dates of transplanting on the yield of late Paddy varieties.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) As per treatments. (iv) (a) 3 ploughings by *desi* plough. (b) Japanese method. (c) 7 srs./ac. (d) 10"×10". (e) 2 to 3. (v) Nil. (vi) As per treatments. (vii) Irrigated. (viii) 1 weeding. (ix) 31.58". (x) 19.12.1959 to 13.1.1960.

2. TREATMENTS :

Same as in expt. no. 59(222) on page 168.

3. DESIGN :

(i) Split-plot. (ii) (a) 5 main-plots/block ; 3 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a) 11'8"×21'8". (b) 10'×20'. (v) 10"×10". (vi) Yes.

4. GENERAL :

Same as in expt. no. 59(126) above.

RESULTS :

(i) 1873 lb./ac. (ii) (a) 307.7 lb./ac. (b) 310.2 lb./ac. (iii) Only D and V effects are highly significant. (iv) Av. yield of grain in lb./ac.

	D_1	D_2	D_3	D_4	D_5	Mean
V_1	2610	2637	1669	2019	655	1918
V_2	2783	2856	2446	2001	918	2201
V_3	1683	1746	1724	1527	23	1501
Mean	2356	2413	1946	1849	799	1873

S.E. of difference of two
1. D marginal means = 145.0 lb./ac.
2. V marginal means = 113.2 lb./ac.
3. V means at the same level of D = 253.2 lb./ac.
4. D means at the same level of V = 252.6 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 58(7).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'CV'.**

Object :—To find out the effect of different dates of transplanting on the yield of early Paddy varieties.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Clay loam. (b) N.A. (iii) 15.6.1958/as per treatments. (iv) (a) 3 ploughings followed by beaming. (b) Line planting. (c) 7 srs./ac. (d) 10"×10". (e) 2 to 3. (v) 40 lb./ac. of N as A/S and 40 lb./ac. of P_2O_5 as Super at the time of sowing. (vi) As per treatments. (vii) Irrigated. (viii) 3 hoeings by Japanese hoe. (ix) 33.26". (x) 21.11.1958 to 1.12.1958.

2. TREATMENTS :

Main-plot treatments :

3 dates of transplanting : D_1=1st August, D_2=15th August and D_3=1st September.

Sub-plot treatments :

3 varieties : V_1=141—BK, V_2=115—BK and V_3=2206—B.

3. DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/block ; 3 sub-plots/main-plot. (b) 55'×41'3". (iii) 3. (iv) (a) 18'4"×13'9". (b) 16'8"×12'1". (v) N.A. (vi) Yes.

4. GENERAL :

(i) Lodging in all except D_4 plot. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1958—N.A. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3144 lb./ac. (ii) (a) 1302 lb./ac. (b) 392 lb./ac. (iii) Only V effect is highly significant. (iv) Av. yield of grain in lb./ac.

	D_1	D_2	D_3	Mean
V_1	2987	2855	2024	2622
V_2	3793	3620	2032	3148
V_3	4114	3908	2962	3661
Mean	3631	3461	2339	3144

S.E. of difference of two
1. D marginal means = 613 lb./ac.
2. V marginal means = 185 lb./ac.
3. V means at the same level of D = 320 lb./ac.
4. D means at the same level of V = 662 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 59(1).**
Site :- Agri. Res. Instt., Sabour. **Type :- 'CV'.**

Object :—To find out the effect of different dates of transplanting on the yield of early Paddy varieties.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Dhaincha*. (c) Nil. (ii) (a) Clay loam. (b) N.A. (iii) As per treatments. (iv) (a) 3 ploughings followed by beaming. (b) Line planting. (c) 7 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) *Dhaincha* at 15 srs./ac.+40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (vi) As per treatments. (vii) Irrigated. (viii) 3 hoeings by Japanese hoe. (ix) 32.00″. (x) 28, 29.11.1959.

2. TREATMENTS :

Same as in expt. no. 58(294) on page 170.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/block ; 3 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a) 18′4″×13′9″. (b) 16′8″×12′4″. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1958—N.A. (b) No. (c) Nil. (v) (a) Patna, Pusa, Kanke and Bikramganj. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1443 lb./ac. (ii) (a) 511 lb./ac. (b) 646 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	D_1	D_2	D_3	D_4	Mean
V_1	1942	1126	1550	531	1287
V_2	1126	1410	1483	1478	1374
V_3	1676	1468	2190	1339	1668
Mean	1581	1335	1741	1116	1443

S.E. of difference of two
1. D marginal means = 241 lb./ac.
2. V marginal means = 264 lb./ac.
3. V means at the same level of D = 527 lb./ac.
4. D means at the same level of V = 508 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 58(9).**
Site :- Agri. Res. Instt., Sabour. **Type :- 'CV'.**

Object :—To find out the effect of different dates of transplanting on Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Clay loam. (b) N.A. (iii) 15.6.1951/as per treatments. (iv) (a) 2 ploughings followed by beaming. (b) Line planting. (c) 7 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) 40 lb./ac. of P_2O_5 as Super, 40 lb./ac. of N as A/S at time of transplanting. (vi) As per treatments. (vii) Irrigated. (viii) 3 weedings at intervals of 3 weeks after 3 weeks of transplanting. (ix) 33.26″. (x) 18 and 21.12.1958.

2. TREATMENTS :

Main-plot treatments :
3 dates of transplanting : D_1=1st August, D_2=15th August and D_3=1st September.
Sub-plot treatments :
2 varieties : V_1=BK—16 and V_2=BK—88.

3. DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/block ; 2 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 19′×13′. (b) 17′4″×11′4″. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1958—N.A. (b) No. (c) Nil. (v) (a) Nil. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1985 lb./ac. (ii) (a) 529 lb./ac. (b) 218 lb./ac. (iii) V effect and interaction D×V are highly significant. D effect is significant. (iv) Av. yield of grain in lb./ac.

	D_1	D_2	D_3	Mean
V_1	3021	2422	1458	2300
V_2	1912	1796	1302	1670
Mean	2466	2109	1380	1985

S.E. of difference of two

1. D marginal means = 265 lb./ac.
2. V marginal means = 89 lb./ac.
3. V means at the same level of D = 154 lb./ac.
4. D means at the same level of V = 286 lb./ac.

Crop :- Paddy ***(Kharif).*** **Ref :- Bh. 59(2).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'CV'.**

Object :—To find out the effect of different dates of transplanting on yield of medium varieties of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Dhaincha.* (c) 20 lb./ac. of N as A/S. (ii) (a) Clay loam. (b) N.A. (iii) N.A./as per treatments. (iv) (a) 3 ploughings followed by beaming. (b) Line transplanting. (c) 7 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) *Dhaincha* buried 1 week before transplanting. 40 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super at the time of sowing and 20 lb./ac. of P_2O_5 as Super at the time of earthing up. (vi) As per treatments. (vii) Irrigated. (viii) 1 earthing and 3 hoeings by Japanese hoe. (ix) 32.00″. (x) 2. 19.12.1959.

2 TREATMENTS :

Same as in expt. no. 58(296) on page 169.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/block ; 2 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 19′×13′. (b) 17′4″×11′4″. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1958—N.A. (b) No. (c) Nil. (v) (a) Nil. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1788 lb./ac. (ii) (a) 502 lb./ac. (b) 510 lb./ac. (iii) Only D effect is highly significant. (iv) Av. yield of grain in lb./ac.

	D_1	D_2	D_3	D_4	Mean
V_1	2175	1805	1957	1039	1744
V_2	2092	2203	2065	970	1832
Mean	2133	2004	2011	1004	1788

S.E. of difference of two

1. D marginal means = 251 lb./ac.
2. V marginal means = 180 lb./ac.
3. V means at the same level of D = 361 lb./ac.
4. D means at the same level of V = 358 lb./ac.

Crop :- Paddy *(Kharif).* **Ref :- Bh. 58(10).**
Site :- Agri. Res. Instt., Sabour. **Type :- 'CV'.**

Object :—To find out the effect of different dates of transplanting on the yield of late varieties of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Clay loam. (b) N.A. (iii) 15.6.1958/As per treatments. (iv) (a) 3 ploughings followed by beaming. (b) Line planting. (c) 7 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) 40 lb./ac. of N as A/S, 40 lb./ac. of P_2O_5 as Super at the time of transplanting. (vi) As per treatments. (vii) Irrigated. (viii) 3 weedings at intervals of 3 weeks after 3 weeks of transplanting. (ix) 33.26″. (x) 30.12.1958.

2. TREATMENTS :

Main-plot treatments :
3 dates of transplanting : D_1= 1st August, D_2= 15th August and D_3= 1st September.
Sub-plot treatments :
3 varieties : V_1=BK–36, V_2=498—2A and V_3=818—3A.

3. DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/block ; 3 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a) 21′8″×11′8″. (b) 20′×10′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1958—N.A. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2498 lb./ac. (ii) (a) 103 lb./ac. (b) 249 lb./ac. (iii) D and V effects and interaction D×V are highly significant. (iv) Av. yield of grain in lb./ac.

	D_1	D_2	D_3	Mean
V_1	3208	2759	2104	2690
V_2	2768	3866	2986	3207
V_3	1851	2410	527	1596
Mean	2609	3012	1872	2498

S.E. of difference of two

1. D marginal means = 48 lb./ac.
2. V marginal means = 118 lb./ac.
3. V means at the same level of D = 204 lb./ac.
4. D means at the same level of V = 173 lb./ac.

Crop :- Paddy *(Kharif).* **Ref :- Bh. 59(4).**
Site :- Agri. Res. Instt., Sabour. **Type :- 'CV'.**

Object :—To find out the effect of different dates of transplanting on the yield of late Paddy varieties.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Clay loam. (b) N.A. (iii) 15.6.1959/as per treatments. (iv) (a) 3 ploughings followed by beaming. (b) Line planting. (c) 7 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) 40 lb./ac. of N as A/S ; 40 lb./ac. of P_2O_5 as Super at transplanting. (vi) As per treatments. (vii) Irrigated. (viii) 2 hoeings by Japanese hoe. (ix) 32.00″. (x) 17.12.1959.

2. TREATMENTS :

Same as in expt. no. 58(295) on page 167.

3. DESIGN :

Same as in expt. no. 58(291) on page 174.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1958—N.A. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1822 lb./ac. (ii) (a) 444 lb./ac. (b) 302 lb./ac. (iii) Only V and D effects are highly significant. (iv) Av. yield of grain in lb./ac.

	D_1	D_2	D_3	D_4	Mean
V_1	2604	2223	1075	535	1609
V_2	3253	3062	2541	1139	2499
V_3	1955	1760	1143	572	1358
Mean	2604	2348	1586	748	1822

S.E. of difference of two

1. D marginal means = 210 lb./ac.
2. V marginal means = 123 lb./ac.
3. V means at the same level of D = 247 lb./ac.
4. D means at the same level of V = 291 lb./ac.

Crop :- Paddy. **Ref :- Bh. 56(51).**

Site :- Bot. Sub-Stn., Bikramganj. **Type :- 'CM'.**

Object :—To find out the factors responsible for high yield under Japanese method of Paddy cultivation.

1. BASAL CONDITIONS :

(i) (a) Paddy—Wheat—Paddy. (b) Wheat. (c) 100 lb./ac. of A/S and 100 lb./ac. of Super. (ii) (a) Loamy. (b) Refer soil analysis, Bikramganj. (iii) 30.6.1956/8.8.1956. (iv) (a) 3 ploughings. (b) As per treatments. (c) N.A. (d) As per treatments. (e) N.A. (v) Nil. (vi) BK—115 (early). (vii) Irrigated. (viii) As per treatments. (ix) 46.49″. (x) 30.11.1956/1.12.1956.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 type of seedlings : M_1=Ordinary seedlings (raised on flat bed at 30 lb./ac. with application of fertilizers) and M_2=Japanese seedlings (seeds pre-treated with brine and grown on raised beds at 15 lb./ac. with application of fertilizers).

(2) 7 cultural operations : T_1=Ordinary spacing, $T_2=T_1$+hand weeding, $T_3=T_1$+40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super, $T_4=T_3$+hand weeding, T_5=12″×12″ spacing, $T_6=T_5$+rotary weeding and $T_7=T_6$+40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super.

Ordinary spacing : Transplanting at random by country method.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 14. (b) N.A. (iii) 4. (iv) (a) and (b) 37′×8′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Flowering, straw and grain yield. (iv) (a) 1956—contd. (b) No. (c) Nil. (v) (a) Sabour, Patna and Kanke. (b) N.A. (vi) Heavy floods during growth period. (vii) Nil.

5. RESULTS :

(i) 2670 lb./ac. (ii) 284.6 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	T_1	T_2	T_3	T_4	T_5	T_6	T_7	Mean
M_1	2555	2961	2528	2204	2298	2631	2528	2529
M_2	2462	2840	3143	3001	2707	2583	2934	2810
Mean	2509	2901	2836	2602	2503	2607	2731	2670

S.E. of T marginal mean = 100.6 lb./ac.
S.E. of M marginal mean = 53.8 lb./ac.
S.E. of body of table = 142.3 lb./ac.

Crop :- Paddy ***(Kharif).*** **Ref :- Bh. 57(246).**

Site :- Bot. Sub-Stn., Bikramganj. **Type :- 'CM'.**

Object :—To find out the factors contributing towards high yield under Japanese method of Paddy cultivation.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Wheat. (c) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (ii) Sandy loam. (b) Refer soil analysis, Bikramganj. (iii) 27 and 28.7.1957. (iv) 4 ploughings. (b) As per treatments. (c) 10 srs./ac. (d) As per treatments. (e) 2 to 3. (v) Nil. (vi) BK—115. (vii) Unirrigated. (viii) As per treatments. (ix) 13.90″. (x) 24.11.1957.

2. TREATMENTS :

Same as in expt. no. 56(51) on page 184.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 14. (b) N.A. (iii) 4. (iv) (a) 40′×11′. (b) 37′×8′.(v) 1½′×1½′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1956—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 3999 lb./ac. (ii) 288 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	T_1	T_2	T_3	T_4	T_5	T_6	T_7	Mean
M_1	3722	3935	3888	3954	3954	3916	4077	3921
M_2	4087	4087	4186	4281	3983	3812	4106	4077
Mean	3904	4011	4037	4118	3968	3864	4091	3999

S.E. of T marginal mean = 101.8 lb./ac.
S.E. of M marginal mean = 54.4 lb./ac.
S.E. of body of table = 144.0 lb./ac.

Crop :- Paddy (*Kharif*). **Ref :- Bh. 58(300).**

Site :- Bot. Sub-Stn., Bikramganj. **Type :- 'CM'.**

Object :—To find out the factors contributing towards high yield under Japanese method of Paddy cultivation.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Wheat. (c) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy loam. (b) Refer soil analysis, Bikramganj. (iii) 8/9.8.1958. (iv) (a) 4 ploughings. (b) As per treatment. (c) 10 srs./ac. (d) 10"×10". (e) 2 to 3. (v) Nil. (vi) 498—2A. (vii) Unirrigated. (viii) As per treatments. (ix) 42.93". (x) 9.12.1958.

2. TREATMENTS :

All combination of (1), (2) and (3)+2 extra treatments

(1) 2 types of seedlings : O_1=Ordinary seedlings, O_2=Japanese seedlings.

(2) 2 levels of manure : M_0=No manure and M_1=40 lb./ac. of N on A/S+40 lb./ac. of P_2O_5 as Super.

(3) 3 levels of weeding : W_0=No weeding, W_1=Hand weeding and W_2=Weeding by rotary hoe.

Extra treatments : T_1=Ordinary seed+manure+hand weeding and T_2=Ordinary seed+no manure+hand weeding.

3. DESIGN :

(i) R.B.D. (ii) (a) 14. (b) N.A. (iii) 4. (iv) (a) 38'8"×11'2". (b) 36'8"×9'2". (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1956—contd. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) Nil. (vii) Treatments are slightly modified during 1958.

5. RESULTS :

(i) 2251 lb./ac. (ii) 288.3 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

T_1=2366 lb./ac. T_2=2216 lb./ac.

	W_0	W_1	W_2	Mean	M_0	M_1
O_1	2120	2195	2241	2185	2105	2266
O_2	2107	2274	2529	2303	2222	3385
Mean	2114	2234	2385	2244	2163	2326
M_0	2029	2141	2320			
M_1	2199	2328	2450			

S.E. of M or O marginal mean = 58.8 lb./ac.
S.E. of W marginal mean = 72.1 lb./ac.
S.E. of body of O×M table = 83.2 lb./ac.
S.E. of body of O×W or M×W table = 101.9 lb./ac.

Crop :- Paddy (*Kharif*). **Ref :- Bh. 59(94).**

Site .- Agri. Res. Instt., Kanke. **Type :- 'CM'.**

Object :—To test the suitability of Chinese method of Paddy cultivation.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 40 lb./ac. of N as A/S+40 lb./ac. P_2O_5 as Super. (ii) Sandy loam. (b) Refer soil analysis, Kanke. (iii) 6.7.1959/N.A. (iv) (a) to (e) As per treatments. (v) As per treatments. (vi) 498—2A. (vii) N.A. (viii) 3 weedings followed by rotary hoe. (ix) 40.7". (x) Chinese method 7,8.12.1959, Japanese method 5, 6.12.1959 and local method 3, 4.12.1959.

2. TREATMENTS :

3 methods of cultivation :

1. Chinese method : (a) Digging to 3′ and filling pits. (b) Transplanting. (c) 669 lb./ac. (d) 6″×6″. (e) 2. 1760 lb./ac. of compost+50 lb./ac. of N as A/S as B.D.
2. Japanese method : (a) 2 ploughings, 2 cross-ploughings and puddling by *desi* plough. (b) Transplanting. (c) 20 lb./ac. (d) 10″×10″. (e) 4. 40,000 lb./ac. of compost+350 lb./ac. of Super+13600 lb./ac. of ash before sowing.
3. Local method : (a) and (b) Same as in treatment 2. (c) 15 lb./ac. (d) 10″×10″. (e) 2 to 3. 40,000 lb /ac. of compost, 200 lb./ac. of A/S, 200 lb./ac. of Super and 13600 lb./ac. of ash before sowing.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) 120′×44′ (iii) 6. (iv) (a) 30′×30′. (b) Chinese : 28′×28′ ; Japanese and local : 26′8″×26′8″. (v) 2 rows alround. (vi) Yes.

4. GENERAL :

(i) Good ; partial lodging. (ii) Attack of stem-borer and leaf-roller—Folidol and Endrine sprayed. (iii) Grain and straw yield. (iv) (a) to (c) N.A. (v) (a) Sabour, Pusa and Purnea. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3473 lb./ac. (ii) 407.9 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb /ac.

Treatment	1	2	3
Av. yield	3290	3555	3573

S.E./mean = 166.5 lb./ac.

Crop :- Paddy. **Ref :- Bh. 55(19).**

Site :- Bot. Sub-Stn., Kanke. **Type :- 'CM'.**

Object :—To study the factors contributing towards high yield under different methods of Paddy cultivation.

1. BASAL CONDITIONS :

(i) (a) Paddy—Fallow—Paddy. (b) Paddy. (c) 10 C.L./ac. of F.Y.M.+40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (ii) (a) Laterite. (b) N.A. (iii) 1.7.1955/17.8.1955. (iv) (a) 3 ploughings by *desi* plough. (b) to (d) As per treatments. (e) 2 to 3. (v) Green manuring by *dhaincha*. (vi) 498—2A (late). (vii) Unirrigated. (viii) As per treatments. (ix) 31.10″. (x) 13.12.1955.

2. TREATMENTS :

Same as in expt. no. 56(51) on page 184.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 14. (b) N.A. (iii) 2. (iv) (a) 36′×9′. (b) 34′×7′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1955—N.A. (b) No. (c) Nil. (v) (a) Sabour, Bikramganj and Patna. (b) N.A. (vi) and (vi) Nil.

5. RESULTS :

(i) 1267 lb./ac. (ii) 182.5 lb./ac. (iii) All effects are highly significant. (iv) Av. yield of grain in lb /ac.

	T_1	T_2	T_3	T_4	T_5	T_6	T_7	Mean
M_1	1018	961	1956	1784	411	285	939	1051
M_2	1658	1029	2362	2522	806	618	1396	1484
Mean	1338	995	2159	2153	608	452	1167	1267

S.E. of T marginal mean = 91.2 lb./ac.
S.E. of M marginal mean = 48.8 lb./ac.
S.E. body of table = 129.0 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 57(100).**
Site :- Bot. Sub-Stn., Kanke. **Type :- 'CM'.**

Object :—To study the factors contributing towards the high yield under different methods of Paddy cultivation.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy loam. (b) N.A. (iii) 28.6.1957/6.8.1957. (iv) (a) 3 ploughings. (b) As per treatments. (c) 7 srs./ac. (d) As per treatments. (e) 2 to 3. (v) Nil. (vi) 298—2A. (vii) Unirrigated. (viii) As per treatments. (ix) 40.84". (x) 13.12.1957.

2. TREATMENTS :

Same as in expt. no. 56(51) on page 184.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 14. (b) 128'4"×36'8". (iii) 2. (iv) (a) 36'8"×9'2". (b) 35'×7'6". (v) 1 row alround. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Attack of Helminthosporium and blast—no control measures taken. (iii) Biometric observations and grain yield. (iv) (a) 1955—1958. (b) No. (c) Nil. (v) (a) Patna, Sabour, Pusa and Bikramganj. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2896 lb./ac. (ii) 299.8 lb./ac. (iii) T effect is highly significant. M effect is significants. (iv) Av. yield of grain in lb./ac.

	T_1	T_2	T_3	T_4	T_5	T_5	T_7	Mean
M_1	2879	3007	3069	3262	1653	2164	3177	2744
M_2	3177	3135	3390	3358	2559	2420	3294	3048
Mean	3028	3071	3230	3310	2106	2292	3236	2896

S.E. of T marginal mean = 149.9 lb./ac.
S.E. of M marginal mean = 80.1 lb./ac.
S.E. of body of table = 212.0 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 58(72).**
Site :- Bot. Sub-Stn., Kanke. **Type :- 'CM'.**

Object :—To study the factors contributing towards high yield under Japanese method of Paddy cultivation.

1, BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 26.6.1958/22.7.1958. (iv) (a) 3 ploughings. (b) As per treatments. (c) 7 srs./ac. (d) As per treatments. (e) N.A. (v) Nil. (vi) 498—2A (late). (vii) Unirrigated. (viii) As per treatments. (ix) 40.77". (x) 13.12.1959.

2. TREATMENTS :

Same as in expt. no. 58(300) on page 186.

3. DESIGN :

(i) R.B.D. (ii) (a) 14. (b) 124′6″×36′8″. (iii) 4. (iv) (a) 36′8″×7′6″. (b) 35′×5′10″. (v) 1 row alround. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Tiller counts, straw and grain yield. (iv) (a) 1955—1958. (b) No. (c) Nil. (v) (a) Patna, Pusa, Sabour and Bikramganj. (b) N.A. (vi) Nil. (vii) Treatments modified in 1958.

5. RESULTS :

(i) 3345 lb./ac. (ii) 413.0 lb./ac. (iii) 'Extra treatments *vs.* rest' is highly significant. (iv) Av. yield of grain in lb./ac.

T_1=3888 lb./ac. ; T_2=4293 lb./ac.

	W_0	W_1	W_2	Mean	M_0	M_1
O_1	3105	3324	3213	3214	3243	3185
O_2	2957	3292	3398	3216	3028	3404
Mean	3031	3308	3306	3215	3135	3295
M_0	2926	3167	3312			
M_1	3136	3449	3299			

S.E. of M or O marginal mean = 84.3 lb./ac.
S.E. of W marginal mean = 103.2 lb./ac.
S.E. of body of O×M table = 119.2 lb./ac.
S.E. of body of O×W or M×W table = 146.0 lb./ac.

Crop :- Paddy. **Ref :- Bh. 55(135).**
Site :- Bot. Sub-stn., Patna. **Type :- 'CM'.**

Object :— To study the factors contributing towards the high yield under Japanese method of cultivation.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Paddy. (b) Sugarcane. (c) Nil. (ii) (a) Heavy clay soil. (b) N.A. (iii) 14.6.1955/22.7.1955. (iv) (a) 3 ploughings and puddling. (b) to (d) As per treatments. (e) 2 to 3. (v) Nil. (vi) BK—36 (late). (vii) Irrigated. (viii) Weeding. (ix) 45. 21″. (x) 6.12.1955.

2. TREATMENTS :

Same as in expt. no. 56(51) on page 184.

3. DESIGN :

(i) R.B.D. (ii) (a) 14 (b) N.A. (iii) 2. (iv) (a) 9′×29′. (b) 7′×27′ (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (vi) (a) 1955—contd. (b) No. (c) Nil. (v) (a) Bikramganj and Sabour (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2329 lb./ac. (ii) 95.2 lb./ac. (iii) T effect alone is highly significant. (iv) Av. yield of grain in lb./ac.

	T_1	T_2	T_3	T_4	T_5	T_6	T_7	Mean
M_1	2737	1816	2722	2262	1844	2838	2593	2402
M_2	2535	2045	2895	1873	1930	2146	2377	2257
Mean	2636	1930	2808	2068	1887	2492	2485	2329

S.E. of T marginal mean = 97.6 lb./ac.
S.E. of M margnial mean = 52.2 lb./ac.
S.E. of body of table = 138.0 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 56(241).**

Site :- Agri. Res. Instt., Patna. **Type :- 'CM'.**

Object :—To study the factors contributing towards high yield under different methods of Paddy cultivation.

1. BASAL CONDITIONS :

(i) (a) Paddy—*Paira* gram—Paddy. (b) *Paira* gram. (c) Nil. (ii) (a) Heavy clay. (b) Refer soil analysis, Patna. (iii) 9.6 1956/20.7.1956. (iv) (a) 4 ploughings by *desi* plough. (b) As per treatments. (c) 7 srs./ac. (d) As per treatments. (c) 2 to 3. (v) Nil. (vi) BK—36 (late). (vii) Irrigated. (viii) As per treatments. (ix) 29.11". (x) 12, 13.12. 1956.

2. TREATMENTS :

Same as in expt. no. 56 (51) on page 184.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 14. (b) N.A. (iii) 2. (iv) (a) 7'6"×30'10". (b) 5'10"×29'2". (v) 1 row all round. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1955—1958. (b) No. (c) Nil. (v) (a) Sabour and Kanke. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2975 lb./ac. (ii) 472.5 lb./ac. (ii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	T_1	T_2	T_3	T_4	T_5	T_6	T_7	Mean
M_1	2658	3490	2593	3202	3322	3346	3266	3125
M_2	3122	1961	3146	2161	2969	3122	3298	2826
Mean	2890	2726	2869	2682	3145	3234	3282	2975

S.E. of T marginal mean = 236.2 lb./ac.
S.E. of M marginal mean = 126.3 lb./ac.
S.E. of body of table = 334.1 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 57(171).**

Site :- Agri. Res. Instt., Patna. **Type :- 'CM'.**

Object : – To study the factors contributing towards high yield under the Japanese method of Paddy. cultivation.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Dhaincha.* (c) Nil. (ii) (a) Heavy clay. (b) Refer soil analysis, Patna. (iii) N.A./25, 26.7.1957. (iv) (a) 4 ploughings. (b) As per treatments. (c) 10 srs./ac. (d) 10"×10". (e) 2 to 3. (v) G.M. with *dhaincha.* (vi) BK—36 (late). (vii) Unirrigated. (viii) As per treatments. (ix) 28.39". (x) 11.12.1957.

2. TREATMENTS :

Same as in expt. no. 58(300) on page 186.

3. DESION :

(i) R.B.D. (ii) (a) 14. (b) N.A. (iii) 4. (iv) (a) 21⅔'×11⅔'. (b) 20'×10'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (vi) (a) 1955—1958. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3180 lb./ac. (ii) 453.8 lb./ac. (iii) No effect is significant. (iv) Av. yield of grain in lb./ac.

T_1 = 3088 lb./ac. and T_2 = 3337 lb./ac.

	W_0	W_1	W_2	M_0	M_1	Mean
O_1	2961	3182	3115	3174	2999	3086
O_2	3554	3327	2906	3191	3334	3262
Mean	3258	3254	3010	3182	3167	3174
M_0	3542	3581	2424			
M_1	2974	2927	3597			

S.E. of M or O marginal mean = 92.6 lb./ac.
S.E. of W marginal mean = 113.4 lb./ac.
S.E. of body of O×M table = 131.0 lb..ac.
S.E. of body of O×W or M×W table = 160.4 lb./ac.

Crop :- Paddy ***(Kharif).*** **Ref :- Bh. 58(181).**

Site :- Agri. Res. Instt., Patna. **Type :- 'CM'.**

Object :—To study the factors contributing to high yield under the Japanese method.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Dhaincha.* (c) Nil. (ii) (a) Heavy clay. (b) Refer soil analysis, Patna. (iii) N.A./9.8.1958. (iv) (a) 5 ploughings. (b) As per treatments. (c) 20 lb./ac. (d) 10″×10″. (e) 2 to 3. (v) G.M. with *dhaincha.* (vi) BK—36 (late). (vii) Unirrigated. (viii) As per treatments. (ix) 20.36″. (x) 10.12.1958.

2. TREATMENTS :

Same as in expt no. 58(300) on page 186.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 57(171) on page 190.

5. RESULTS :

(i) 1703 lb./ac. (ii) 587.5 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

T_1 = 1525 lb./ac. and T_2 = 1994 lb./ac.

	W_0	W_1	W_2	M_0	M_1	Mean
O_1	1503	1544	1641	1526	1599	1563
O_2	1626	2310	1537	1592	2058	1824
Mean	1564	1927	1589	1559	1828	1693
M_0	1441	1810	1425			
M_1	1687	2045	1753			

S.E. of M or O marginal mean = 119.9 lb./ac.
S.E. of W marginal mean = 121.9 lb./ac.
S.E. of body of O×M table = 169.6 lb./ac.
S.E. of body of O×W or M×W table = 207.7 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 57 (168).**

Site :- Agri. Res. Instt., Patna. **Type :- 'CM'.**

Object :—To find out the effect of transplanting G. M. in Paddy fields.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) G.M. crop. (c) Nil. (ii) (a) Heavy clay. (b) Refer soil analysis, Patna. (iii) 10.8.1957. (iv) (a) 4 ploughings. (b) Japanese method. (c) 10 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) G. M. applied. (vi) BK—36. (late). (vii) Unirrigated. (viii) 1 weeding. (ix) 24.07″. (x) 4.12.1957.

2. TREATMENTS :

4 methods of trampling of G.M. : M_1=Conventional method of G.M. trampling, M_2=Trampling by G.M. trampler, M_3=Trampling by G.M. trampler and mould board plough and M_4=Trampling by U.P. plough no. 2 with fork attachment.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) N.A. (b) 55′×35′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (ii) Grain and straw yield. (iv) (a) 1956—N.A. (b) No. (c) Nil. (v) to (vii) N.A.

5. RESULTS :

(i) 1055 lb./ac. (ii) 228.7 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3	M_4
Av. yield	879	1106	1074	1162

S.E./mean =102.3 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 57 (186).**

Site :- Agri. Res. Instt., Patna. **Type :- 'CM'.**

Object :—To find out the effect of trampling G.M. in Paddy fields.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) G.M. crop. (c) Nil. (ii) (a) Heavy clay. (b) Refer soil analysis, Patna. (iii) 23.7.1957. (iv) (a) 4 ploughings. (b) Japanese method. (c) 10 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) G.M. (vi) CH—10. (vii) Unirrigated. (viii) 1 weeding. (ix) 16.57″. (x) 18.10.1957.

2. TREATMENTS :

4 methods of trampling G.M. crop : M_1=By *Patta* and mould board plough (conventional method), M_2=Trampling by G.M. trampler, [M_3=Trampling by G.M. trampler and Punjab plough and M_4=Trampling by G.M. trampler and U.P. plough no. 2.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 80′×30′. (v) N.A. (vi) Yes.

4. GENERAL :

Same as in expt. no. 57 (168) above.

5. RESULTS :

(i) 1231 lb./ac. (ii) 232.0 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3	M_4
Av. yield	1616	1065	1046	1196

S.E /mean =116.0 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 59 (236).**

Site :- Distt. Agri. Farm, Purnea. **Type :- 'CM'.**

Object :—To see the suitablity of Chinese method of Paddy cultivation.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Gram. (c) N.A. (ii) (a) Sandy loam with alkaline patches. (b) N.A. (iii) 7.7.1959/1.8.1959. (iv) (a) to (e) As per treatments. (v) As per treatments. (vi) 498—2A. (vii) Irrigated. (viii) 4 hoeings at early stage and 2 weedings later. (ix) 38.7″. (x) 14.12.1959.

2. TREATMENTS :

3 methods of Paddy cultivation : M_1=Chinese method : (a) Cutting up the earth to 3′ depth and filling the pit by spade. (b) Transplanting in lines. (c) 669 lb./ac. of seed in seed bed. (d) 6″×6″ Spacing and (e) 2 seedlings/hole with 1760 lb./ac. of compost+50 lb./ac. of N as A/S in seed bed, M_2 = Japanese method : (a) 4 ploughings and puddling by *desi* plough (b) Transplanting in lines. (c) 20 lb./ac. of seed in seed bed. (b) 10″×10″ spacing. (e) 4 seedlings/hole with 30 lb. compost+4 ozs. of Super+10 lb. ash per seed bed of 8′×4′ before sowing and M_3=Local method : (a) and (b) same as in M_2. (c) 15 lb./ac. of seed in seed bed. (d) 9″×9″ (e) 2 to 3 seedlings/hole with 30 lb of compost + 2.5 ozs. of A/S+ 2.5 ozs. of Super+ 10 lb. ash per seed bed of 8′×4′ before sowing.

3. DESIGN :

(i) R.B.D. (ii) (a) 3 (b) 120′×44′. (iii) 6. (iv) (a) 30′×30′. (b) For M_1 : 28′×28′, for M_2 : 26′8″×26′8″ and for M_3 : 27′×27′. (v) 2 rows. (vi) Yes

4. GENERAL :

(i) Good. (ii) Attack of stem-borer and leaf-spot—Folidol was sprayed. (iii) Grain and straw yield. (iv) (a) N.A. (b) No. (c) Nil. (v) (a) Sabour, Ranchi, Pusa, Patna and Bikramganj. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2031 lb./ac. (ii) 385.3 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3
Av. yield	1654	2297	2142

S.E./mean = 157.3 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 59 (234).**

Site :- Agri. Res. Instt., Pusa. **Type :- 'CM'.**

Object :—To test the suitability of Chinese method of Paddy cultivation.

BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy loam (b) N.A. (iii) 8.7.1959/2.8.1959. (iv) (a) to (e) As per treatments. (v) As per treaments. (vi) 498—2A (vii) Irrigated. (viii) 3 weedings. (ix) 32.50″. (x) 23, 24.12.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no 59(94) on page 186.

4. GENERAL :

(i) Good (ii) Nil (iii) Grain and straw yield. (iv) (a) N.A. (b) No. (c) Nil. (v) (a) Patna, Sabour, Kanke Purnea and Bikramganj (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2719 lb./ac. (ii) 369.9 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3
Av. yield	2574	2901	2683

S.E./mean = 151.0 lb./ac.

Crop :- Paddy. **Ref :- Bh. 54(42).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'CM'.**

Object :—To study the factors contributing towards high yield under Japanese method of Paddy cultivation.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) No. (ii) (a) Sandy loam. (b) N.A. (iii) 17, 20.6.1954/2.8.1954. (iv) (a) 3 to 4 ploughings with country plough. (b) to (d) As per treatments. (e) 2 to 3. (v) Nil. (vi) BK—36 (late). (vii) Unirrigated. (viii) As per treatments. (ix) 41.69". (x) 17, 18.12.1954.

2. TREATMENTS :

Same as in expt. no. 56(51) on page 184.

3. DESIGN:

(i) Fact in R.B.D. (ii) (a) 14. (b) N.A. (iii) 2. (iv) (a) 39'×10'. (b) 37'×8'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Biometric observations and grain yield. (iv) (a) 1954—N.A. (b) No. (c) Nil. (v) (a) Kanke, Bikramganj and Patna. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i 1573 lb./ac. (ii) 303.4 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	T_1	T_2	T_3	T_4	T_5	T_6	T_7	Mean
M_1	1352	1444	2005	1577	1380	1380	1527	1524
M_2	1554	1711	1665	1812	1596	1296	1728	1623
Mean	1453	1578	1835	1669	1488	1338	1628	1573

S.E. of T marginal mean = 151.7 lb./ac.
S.E. of M marginal mean = 81.1 lb./ac.
S.E. of body of table = 214.5 lb./ac.

Crop :- Paddy. **Ref :- Bh. 55(73).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'CM'.**

Object :—To study the factors contributing towards high yield under Japanese method of Paddy cultivation.

1. BASAL CONDITIONS :

(i) (a) G.M. (*dhaincha*)—Paddy. (b) G.M. (*dhaincha*). (c) 20 lb./ac. of A/S at the time of *dhaincha* sowing. (ii) (a) Sandy loam. (b) N.A. (iii) 19.6.1955/2.8.1955. (iv) (a) *Dhaincha* buried by Punjab plough and field prepared by country plough. (b) to (d) As per treatments. (e) 2 to 3. (v) *Dhaincha* at 4083 lb./ac. (vi) BK—36 (BR—7, late *Aman*). (vii) Unirrigated. (viii) As per treatments. (ix) 32.36″. (x) 18.12.1955.

2. TREATMENTS :

Same as in expt. no. 54(42) on page 194.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 14. (b) N.A. (iii) 2. (iv) (a) 37′×8′. (b) 35′×6′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Same in expt. no. 54(42) on page 194.

5. RESULTS:

5052 lb./ac. (ii) 438.7 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain lb./ac.

	T_1	T_2	T_3	T_4	T_5	T_6	T_7	Mean
M_1	5082	5069	4784	4849	4888	5275	5050	4997
M_2	5095	5088	5004	4868	5490	5238	4965	5107
Mean	5088	5078	4894	4858	5189	5257	5007	5052

S.E. of T marginal mean = 219.4 lb./ac.
S.E of M marginal mean = 117.2 lb./ac.
S.E. of body of table = 310.2 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 56 (71)**
Site :- Agri. Res. Instt., Sabour. **Type :- 'CM'.**

Object :—To study the factors contributing towards high yield under Japanese method of Paddy cultivation.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Wheat. (c) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (ii) (a) Loam. (b) N.A. (iii) 13.3.1956/19.7.1956. (iv) (a) 3 ploughings followed by beaming. (b) Japanese method. (c) 7½ srs./ac. (Japanese) and 20 srs./ac. (ordinary). (d) As per treatments. (e) 2 to 3. (v) Nil. (vi) BK—36. (vii) Irrigated. (viii) As per treatments. (ix) 54.00″. (x) 15.12.1956.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no 54(42) on page.

5. RESULTS :

(i) 2310 lb./ac. (ii) 284.7 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	T_1	T_2	T_3	T_4	T_5	T_6	T_7	Mean
M_1	2575	2346	2078	2348	2336	2364	2313	2337
M_2	2304	2486	2410	2382	2208	2152	2042	2283
Mean	2440	2416	2244	2364	2272	2258	2178	2310

S.E. of T marginal mean = 142.4 lb./ac.
S.E. of M marginal mean = 76.1 lb./ac.
S.E. of body of table = 203.1 lb./ac.

Crop :- Paddy ***(Kharif).*** **Ref :- Bh. 58 (11).**

Site :-Agri. Res. Instt., Sabour. **Type :- 'CM'.**

Object :—To study the factors contributing towards high yield in Japanese method of paddy cultivation.

1. BASAL CONDITIONS :

(i (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Clay loam. (b) N.A. (iii) 15, 16.6.1958/8, 9.8.1958. (iv) (a) 3 ploughings followed by beaming. (b) Line planting. (c) and (d) As per treatments. (e) 3 to 4. (v) Nil. (vi) BK—36 (late). (vii) Irrigated. (viii) As per treatments. (ix) 33.26". (x) 22, 23.12.1958.

2. TREATMENTS :

Same as in expt. no 54 (42) on page 194 with $T_5 = 10'' \times 10''$.

3. DESIGN :

(i) Fact in R.B.D. (ii) (a) 14. (b) 33'6"×124'6". (iii) 4. (iv) (a) 33'6"×7'6". (b) 31'10"×5'10". (v) N.A. (vi) Yes.

4 GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a)1958—N.A. (b) No (c) Nil. (v) (a) Patna and Newadah. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3411 lb./ac. (ii) 409.0 lb./ac. (ii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	T_1	T_2	T_3	T_4	T_5	T_6	T_7	Mean
M_1	3518	3754	3797	3585	3115	3196	3988	3565
M_2	3570	2932	2991	2473	3512	3790	3526	3256
Mean	3544	3343	3394	3029	3314	3498	3757	3411

S.E. of T marginal mean = 144.6 lb./ac.
S.E. of M marginal mean = 77.3 lb./ac.
S.E. of body of table = 204.5 lb./ac.

Crop :- Paddy ***(Kharif).*** **Ref :- Bh. 59(228).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'CM'.**

Object :—To see the suitability of Chinese method of Paddy cultivation.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Gram. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 7.7.1959/1.8.1959. (iv) (a) to (e) As per treatments. (v) As per treatments. (vi) 498—2A. (vii) Irrigated. (viii) 3 to 4 weedings. (ix) 25.50" (x) 21/22.12.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 59(94) on page 186.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) No. (b) and (c) —. (v) (a) Kanke, Purnea, Pusa, Bikramganj and Patna. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2436 lb./ac. (ii) 466.2 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb /ac

Treatment	1	2	3
Av. yield	2669	2317	2322

S.E./mean = 190.3 lb./ac.

Crop :- Paddy *(Kharif).* **Ref :- Bh. 57(28).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'CM'.**

Object :—To study the factors contributing towards the high yield under Japanese method of Paddy cultivation.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Dhaincha.* (c) Nil. (ii) (a) Clayey loam. (b) N.A. (iii) 18.6.1957/22.7.1957. (iv) (a) 4 ploughings followed by beaming. (b) Line planting. (c) 7½ srs./ac. (Japanese) and 20 srs./ac. (ordinary) (d) As per treatments. (e) 2 to 3. (v) *Dhaincha* buried before transplanting. (vi) BK—36 (late). (vii) Unirrigated. (viii) Hoeing and weeding as per treatments. (ix) 23.60". (x) 12.12.1957.

2. TREATMENTS :

Same as in expt. no. 54(42) on page 194.

3. DESIGN :

(i) Fact in R.B.D. (ii) (a) 14. (b) N.A. (iii) 2. (iv) (a) 39'2"×10'. (b) 37'8"×8'. (v) N.A. (vi) Yes.

4. GENERAL

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1954—1958. (b) No. (c) Nil. (v) (a) Kanke, Patna and Bikramganj. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1916 lb./ac)b) 227.1 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	T_1	T_2	T_3	T_4	T_5	T_6	T_7	Mean
M_1	1853	1817	2037	2212	1794	1780	2000	1928
M_2	2014	1700	1959	2129	1748	1775	2005	1905
Mean	1934	1761	1998	2170	1771	1778	2003	1916

S.E. of T marginal mean = 113.5 lb./ac.
S.E. of M marginal mean = 60.7 lb./ac.
S.E. of body of table = 160.6 lb./ac.

Crop :- Paddy *(Kharif).* **Ref :- 54(117).**

Site :- Bot. Sub-Stn., Sepaya. **Type :- 'CM'.**

Object :—To study the merits of Japanese method of Paddy cultivation.

1. BASAL CONDITIONS :

(i) (a) Paddy—Fallow—Paddy. (b) Paddy. (c) As per treatments. (ii) (a) Clayey loam. (b) N.A. (iii) 15.6.1954/13.8.1954. (iv) (a) 5 ploughings by Bihar plough. (b) As per treatments. (c) 7 srs./ac. (d) 10"×10". (e) 2 to 3. (v) Nil. (vi) BK—115. (vii) Unirrigated. (viii) 2 hoeings and 2 earthings. (ix) 33.41". (x) 9.12.1954.

2. TREATMENTS :

5 methods of cultivation : C_1=Ryot's method, C_2=Local method with manuring at 5 md./ac. of castor cake and 1 md./ac. of A/S, C_3=Local method with manuring at 10 C.L./ac. of F.Y.M. at transplanting+20 lb./ac. of A/S+200 lb./ac. of Super, C_4= Local method, with manuring at 10 C.L./ac. of F.Y.M. ploughed in+100 lb./ac. of A/S+100 lb./ac. of Super, at transplanting and 100 lb./ac. of A/S +100 lb./ac. of Super mixed and applied one month after transplanting and C_5=Manuring same as in C_4 but with Japanese method of cultivation.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) 1/40th ac. (b) 1/60th ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1953—1954. (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2149 lb./ac. (ii) 331 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	C_1	C_2	C_3	C_4	C_5
Av. yield	1876	2041	2304	2353	2172

S.E./mean = 147.9 lb./ac.

Crop :- Paddy. **Ref :- Bh. 59(MAE).**

Site :- M.A.E. Farm, Sabour. **Type :- 'CM'.**

Object :—Type VII—To determine the optimum spacing, suitable dates of transplanting and optimum no. of seedlings per hole, when fertilizers in the form of N and P are applied to Paddy.

1. BASAL CONDITIONS :

(i) (a) to (c) N A. (ii) (a) Sandy loam. (b) N.A. (iii) As per treatments. (iv) (a) N.A. (b) Transplanting. (c) —. (d) and (e) As per treatments. (v) Town compost at 5000 lb./ac. (vi) BR_7 (late). (vii) Irrigated. (viii) to (x) N.A.

2. TREATMENTS :

Main-plot treatments :

All combinations of (1), (2) and (3)

(1) 3 dates of sowing : D_1=5.8.1959, D_2=20.8.1959 and D_3=5.9.1959.
(2) 3 spacings : $S_1=6'' \times 6''$, $S_2=8'' \times 8''$ and $S_3=10'' \times 10''$.
(3) No. of seedlings/hole: R_1=2, R_2=4 and R_3=6.

Sub-plot treatments:

All combinations of (1) and (2)

(1) 2 levels of N as A/S : N_0=0 and N_1=40 lb./ac.
(2) 2 levels of P_2O_5 as Super : P_0=0 and P_1=40 lb./ac.

3. DESIGN :

(i) Split-plot-cum-confd. (ii) (a) 3 blocks/replication ; 9 main-plots/block ; 4 sub-plots/main-plot. (b) N.A. (iii) 1. (iv) (a) $33' \times 16\frac{1}{2}'$. (b) $29.5' \times 14.75'$. (v) Yes. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Grain yield. (iv) (a) 1959—contd. (b) N.A. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1102 lb./ac. (ii) (a) 277.3 lb./ac. (b) 194.2 lb./ac. (iii) D and N effects are highly significant. D×N, D×R×N, R×N×P and S×N×P effects are significant. Other effects are not significant. (iv) Av. yield of grain lb./ac.

	D_1	D_2	D_3	R_1	R_2	R_3	S_1	S_2	S_3	P_0	P_1	Mean
N_0	1095	1018	703	924	962	930	1045	916	855	936	941	939
N_1	1386	1261	1145	1314	1253	1226	1324	1274	1194	1277	1251	1264
Mean	1241	1139	924	1119	1108	1078	1185	1095	1024	1107	1096	1102
P_0	1180	1205	934	1135	1088	1096	1200	1078	1042			
P_1	1301	1074	913	1102	1127	1060	1169	1112	1007			
S_1	1225	1245	1085	1157	1125	1272						
S_2	1331	1076	878	1112	1115	1058						
S_3	1166	1097	810	1087	1083	903						
R_1	1368	1137	852									
R_2	1152	1278	891									
R_3	1200	1003	1031									

S.E. of difference of two
1. D, R or S marginal means = 65.3 lb./ac.
2. N or P marginal means = 37.4 lb./ac.
3. N or P means at the same level of D, R or S = 64.7 lb./ac,
4. D, R or S means at the same level of N or P = 112.8 lb./ac.
5. Means of the body of D×R, D×S or R×S table = 92.4 lb./ac.
6. Means of the body of N×P table = 52.9 lb./ac.

Crop :- Paddy. **Ref :- Bh. 54(50).**

Site :- Bot. Sub-Stn., Bikramganj. **Type :- 'CMV'.**

Object :—To select Paddy varieties with high ratooning capacity suited for the locality.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Wheat. (c) 100 lb./ac. of A/S and 100 lb./ac. of Super. (ii) (a) Clayey loam. (b) Refer soil analysis, Bikramganj. (iii) 4.7.1954./N.A. (iv) (a) 3 *desi* ploughings. (b) Transplanting. (c) 20 srs./ac. (d) 9″×9″. (e) 2 to 3. (v) Manuring at 20 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super. (vi) As per treatments. (vii) Irrigated. (viii) N.A. (ix) 33.17″. (x) 10.11.1954.

2. TREATMENTS :

Main-plot treatments :

3 manurial treatments given to ratoon crop : M_0=No manure, M_1=5 lb./ac. of N+5 lb./ac. of P_2O_5 and M_2=10 lb./ac. of N+10 lb./ac. of P_2O_5.

Sub-plot treatments :

All combinations of (1) and (2)

(1) 3 varieties : V_1=*Sona*, V_2=*Sathika* and V_3=*Goggaur*.

(2) 2 methods of harvesting : H_1=Plants to be chopped off from half the height and H_2=Plants to be harvested at normal height of 4′ 6″.

N as A/S and P_2O_5 as Super were applied.

3. DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/replication ; 6 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a) and (b) 6′×25′6″. (v) Nil. (vi) Yes.

4. GENERAL :

(i) N.A. (iii) Nil. (iii) Growth, no. of tillers, average height and yield of grain. (iv) (a) 1954—1955. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1459 lb./ac. (ii) (a) 207.7 lb./ac. (b) 364.6 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	V_1	V_2	V_3	H_1	H_2	Mean
M_0	1656	1427	1482	1611	1434	1522
M_1	1226	1299	1537	1305	1403	1354
M_2	1382	1391	1729	1598	1403	1501
Mean	1421	1372	1583	1505	1413	1459
H_1	1489	1360	1665			
H_2	1354	1385	1501			

S.E. of difference of two
1. M marginal means = 84.8 lb./ac.
2. V marginal means = 148.8 lb./ac.
3. H marginal means = 121.5 lb./ac.
4. V means at the same level of M = 257.8 lb./ac.
5. H means at the same level of M = 210.5 lb./ac.
6. M means at the same level of H = 171.3 lb./ac.
7. M means at the same level of V = 226.9 lb./ac.

S.E. of body of V×H table = 148.8 lb./ac.

Crop :- Paddy. **Ref :- Bh. 55(152).**

Site :- Bot. Sub-Stn., Bikramganj. **Type :- 'CMV'.**

Object :—To select varieties of Paddy with high ratooning capacity suited for the locality.

1. BASAL CONDITIONS .

(i) (a) Nil. (b) Wheat. (c) 100 lb./ac. of A/S+100 lb./ac. of Super. (ii) (a) Sandy loam. (b) Refer soil analysis, Bikramganj. (iii) 25.6.1955/25.7.1955. (iv) (a) 3 *desi* ploughings. (b) Transplanting. (c) 20 srs./ac. (d) 9″×9″. (e) 2 to 3. (v) Manuring at 20 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super. (vi) As per treatments. (vii) Irrigated. (viii) Weeding and interculturing by Japanese weeder. (ix) 34.76″. (x) 17.10.1955.

2. TREATMENTS :

Same as in expt. no. 54(50) on page 199.

3. DESIGN .

(i) Split-plot. (ii) (a) 3 main-plots/replication ; 6 sub-plots/main-plot. (b) N.A. (iii) 2. (iv) (a) and (b) 6′×21′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Growth, flowering and yield of grain. (iv) (a) 1954—1955. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) Nil. (vii) Ratoon crop failed.

5. RESULTS :

(i) 2123 lb./ac. (ii) (a) 350.2 lb./ac. (b) 436.6 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	V_1	V_2	V_3	Mean	H_1	H_2
M_0	2267	1956	2222	2148	2089	2207
M_1	2222	1989	2233	2148	2045	2252
M_2	2133	2022	2067	2074	2185	1963
Mean	2207	1989	2174	2123	2106	2141
H_1	2319	1926	2074			
H_2	2096	2052	2274			

S.E. of difference of two

1. M marginal means = 143.0 lb./ac.
2. V marginal means = 178.2 lb./ac.
3. H marginal means = 145.5 lb./ac.
4. V means at the same level of M = 308.7 lb./ac.
5. H means at the same level of M = 252.1 lb./ac.
6. M means at the same level of H = 228.5 lb./ac.
7. M means at the same level of V = 252.9 lb./ac.

S.E. of body of V×H table = 178.2 lb./ac.

Crop :- Paddy ***(Kharif).*** **Ref :- Bh. 59(125).**

Site :- Agri. Res. Instt., Patna. **Type :- 'CMV'.**

Object :—To find out the best combination of date of transplanting and manurial schedule with late Aman varieties of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Heavy clay. (b) Refer soil analysis, Patna. (iii) N.A./As per treatments. (iv) (a) 5 ploughings. (b) Japanese method. (c) 10 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) Nil. (vi) As per treatments. (vii) Unirrigated. (viii) 2 weedings. (ix) N.A. (x) 5.12.1959.

2. TREATMENTS :

All combinations of (1), (2) and (3).

(1) 3 dates of transplanting : D_1=25.8.1959, D_2=10.9.1959 and D_3=25.9.1959.

(2) 3 manurial doses : M_0=Control, M_1=30 lb./ac. of N as A/S+40 lb./ac. of P as Super and M_2=60 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super.

(3) 3 varieties : V_1=BK—36, V_2=498—2A and V_2=818—3.

3. DESIGN :

(i) 3^3 partially confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) N.A. (iii) 2. (iv) (a) $21\frac{2}{3}' \times 11\frac{2}{3}'$. (b) $20' \times 10'$. (v) One row alound. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1959—N.A. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1611 lb./ac. (ii) 196.6 lb./ac. (iii) Main effects of V, D and interaction V×D are significant. No other effect or interaction is significant. (iv) Av. yield of grain in lb./ac.

	V_1	V_2	V_3	Mean	D_1	D_2	D_3
M_0	1329	1996	1634	1653	2296	1738	925
M_1	1310	1929	1570	1603	1890	2129	789
M_2	1266	2074	1388	1576	2023	2006	699
Mean	1302	2000	1531	1611	2070	1958	804
D_1	1658	2609	1941				
D_2	1535	2496	1842				
D_3	712	894	808				

S.E. of any marginal mean = 46.3 lb./ac.
S.E. of body of any table = 80.3 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 56 (230).**

Site :- Irrigation. Res. Stn., Bikramganj. **Type :- 'I'**

Object :—To determine the number and depth of irrigation needed to supplement the rainfall for best yield of Paddy.

1. BASAL CONDITIONS.

(i) (a) Nil. (b) Wheat. (c) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy loam. (b) N.A. (iii) N.A./21 to 23.8.1956. (iv) (a) 4 ploughings. (b) Japanese method. (c) 10 srs./ac. (d) $10'' \times 10''$. (e) 2 to 3. (v) Nil. (vi) 498—2A. (vii) As per treatments. (viii) 1 hoeing and weeding. (ix) 23.24". (x) 27, 28.12.1956.

2. TREATMENTS :

All combinations of (1) and (2)+a control (no irrigation).
(1) 3 intervals of irrigation : T_1=at transplanting, T_2=between 25th Sept. and 10th Oct. and T_3=on 25th Oct.
(2) 3 levels of irrigation : $I_1=3$, $I_2=6$ and $I_3=9$ acre. inches.

3. DESIGN :

(i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 4. (iv) (a) $33' \times 22'$. (b) $27' \times 16'$. (v) N.A. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1956—N.A. (b) and (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 7416 lb./ac. (ii) 793.0 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

Control = 6738 lb./ac.

	T_1	T_2	T_3	Mean
I_1	7350	8109	6971	7477
I_2	7234	7525	7418	7392
I_3	7525	7234	8050	7603
Mean	7370	7623	7480	7491

S.E. of any marginal mean = 228.9 lb./ac.
S.E. of body of table or control mean = 396.5 lb./ac.

Crop :- Paddy *(Kharif).* **Ref :- Bh. 59 (179).**

Site :- Irrigation Res. Stn., Bikramganj. **Type :- 'I'.**

Object ;—To study the effect of levels of irrigation on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Wheat. (c) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy loam. (b) N.A. (iii) N.A./24 to 26.8.1959. (iv) (a) 4 Ploughings. (b) Japanese method. (c) 10 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) 40 lb./ac.of N as A/S+40 lb./ac. of P_2O_5 as Super. (vi) BK—36. (vii) As per treatments. (viii) 2 weedings. (ix) 17.83″. (x) 7.12.1959.

2. TREATMENTS :

5 levels of irrigation : I_0=Control (no irrigation). I_1=Wet soil. (water not to stand, but soil to be kept moist.) I_2=2″ submerged under water (by rain or irrigation). I_3=4″ submerged under water (by rain or irrigation) and I_4=6″ submerged under water (by rain or irrigation).

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 3. (iv) (a) 142½′×15′. (b) 139′×11½′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1959.—N.A. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 3007 lb./ac. (ii) 218.9 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	I_0	I_1	I_2	I_3	I_4
Av. yield	3180	2846	2909	3083	3018

S.E./mean = 126.4 lb./ac.

Crop :- Paddy *(Kharif).* **Ref :- Bh. 56 (228).**

Site :- Irrigation Res. Stn., Bikramganj. **Type :- 'IM'.**

Object :—To study the best combination of manurial doses and irrigation.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Sugarcane. (c) 120 lb./ac. of N as A/S+60 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy loam. (b) N.A. (iii) N.A./13,14.7.56. (iv) (a) 5 Ploughings (b) Japanese method (c) 10 srs./ac. (d) 9″×9″. (e) 2 to 3. (v) Nil. (vi) CH—10 (vii) As per treatments. (vii) Hand weeding. (ix) 26.38″. (x) 4,5.10.1956.

2. TREATMENTS

All combinations of (1) and (2) + a control.

(1) 2 manurial treatments : M_1= 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super and M_2= 20 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super.

(2) 3 intervals of irrigation : I_1= fortnightly irrigation, I_2= monthly irrigation. and I_3= one irrigation at transplanting and another at pre-flowering.

Each irrigation is of 3 acre inches.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) 33′×22′. (b) 30′×19′. (v) 1.5′×1.5′. (vi) Yes.

4. GENERAL.

(i) and (ii) N. A. (iii) Grain and straw yield. (iv) (a) 1956—1957 (b) No (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 858 lb./ac. (ii) 188.8 lb./ac. (iii) No effect is significant. (iv) Av. yield of grain in lb./ac.

Control = 403 lb./ac.

	I_1	I_2	I_3	Mean
M_1	955	1029	1007	997
M_2	803	943	867	871
Mean	879	986	937	934

S.E. of I marginal mean = 66.8 lb./ac.
S.E. of M marginal mean = 54.5 lb./ac.
S.E. of body of table = 95.4 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 57 (226).**

Site :- Irrigation Res. Stn., Bikramganj. **Type :- 'IM'.**

Object :—To study the best combination of manurial doses and irrigations.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Barley. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) N.A./10 to 12.7.1957. (iv) (a) 4 ploughings. (b) Japanese method. (c) 10 srs./ac. (d) 9″×9″. (e) 2 to 3. (v) Nil. (vi) CH—10. (vii) As per treatments. (viii) 1 weeding. (ix) 16.80″. (x) 13, 14.10.1957.

2. TREATMENTS :

Same as in expt. no. 56 (228) on page 202.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) 54⅓′×16′. (b) 51⅓′×13′. (v) 1½′×1½′. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1956—1957. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1786 lb./ac. (ii) 214.2 lb./ac. (iii) Only control *vs.* rest is significant. (iv) Av. yield of grain in lb./ac.

Control = 1387 lb./ac.

	I_1	I_2	I_3	Mean
M_1	1829	1764	1787	1793
M_2	2052	1886	1798	1912
Mean	1940	1825	1793	1853

S.E. of M marginal mean = 61.8 lb./ac.
S.E. of I marginal mean = 75.7 lb./ac.
S.E. of body of table = 107 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 58(258).**

Site :- Irrigation Res. Stn., Bikramganj. **Type :- 'IM.'**

Object :—To study the effect of irrigation on Paddy yield. in accordance with supply of moisture in spells of drought.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Wheat. (c) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy loam (b) N.A. (iii) N.A./30.5.1958. (iv) (a) 4 ploughings. (b) Japanese method. (c) 10 srs./ac. (d) 9″×9″. (e) N.A. (v) Nil. (vi) CH—10. (vii) As per treatments. (viii) 1 weeding and hoeing. (ix) 38.44″. (x) 2.10.1958.

2. TREATMENTS :

Main-plot treatments :

2 manurial does : M_1=25 lb./ac. of N as A/S+20 lb./ac. of P as Super and M_2=50 lb./ac. of N as A/S+40 lb./ac. of P as Super.

Sub-plot treatments :

2 irrigations : I_0=no irrigation and I_1=light irrigation (not more than 2½″ at a time, after a spell of 10 days' drought).

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication ; 2 sub-plots/main-plot. (b) N.A. (iii) 8. (iv) (a) 98′×11½′. (b) 94′×7½′. (v) 2′×2′. (vi) Yes.

5. GENERAL :

(i) and (ii) N.A. (iii) Grain and straw yield. (iv) (a)1958—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1004 lb./ac. (ii) (a) 244.1 lb./ac. (b) 162.6 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	I_0	I_1	Mean
M_1	991	1007	999
M_2	877	1139	1008
Mean	934	1073	1004

S.E. of difference of two

1. M marginal means = 86.3 lb./ac.
2. I marginal means = 57.5 lb./ac.
3. I means at the same level of M = 81.3 lb./ac.
4. M means at the same level of I = 103.7 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 59(210).**

Site :- Irrigation Res. Stn., Bikramganj. **Type :- 'IM'.**

Object :—To study the effect of irrigation on the yield of Paddy in accordance with supply of moisture in spells of drought.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Wheat. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) N.A./10,11.7.1959. (iv) (a) 4 ploughings by *desi* plough. (b) Japanese method. (c) 10 srs./ac. (d) 9″×9″. (e) N.A. (v) Nil. (vi) CH—10. (vii) As per treatments. (viii) 2 weedings and earthings. (ix) 20.25″. (x) 22 to 24.9.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 58(258) on page 203.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1958—N.A. (b) No. (c) Nil. (v) (a) Pusa and Sabour. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2301 lb./ac. (ii) (a) 302.9 lb./ac. (b) 205.8 lb./ac. (iii) Main effect of M is highly significant. No other effect is significant. (iv) Av. yield of grain in lb./ac.

	I_0	I_1	Mean
M_1	1883	1754	1819
M_2	2719	2848	2784
Mean	2301	2301	2301

S.E. of difference of two

1. M marginal means = 107.1 lb./ac.
2. I marginal means = 72.8 lb./ac.
3. I means at the same level of M = 102.9 lb./ac.
4. Me mans at the same level of I = 129.5 lb./ac.

Crop :- Paddy *(Khaaif)*. **Ref :- Bh. 59(178).**

Site :- Irrigation Res. Stn., Bikramganj. **Type :- 'IM'.**

Object :—To study the effect of Nigar on the yield of Paddy with respect to various doses of manures and irrigation.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Wheat. (c) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy loam. (b) N.A. (iii) N.A./22 to 24.8.1959. (iv) (a) 4 ploughings. (b) Japanese method. (c) 10 srs./ac. (d) 10"×10". (c) 2 to 3. (v) Nil. (vi) 498—2A. (vii) As per treatments. (vii) 2 weedings. (ix) 17.83". (x) 29, 30.12.1959.

2. TREATMENTS :

Main-plot treatments :

2 manurial treatments : M_1=20 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super and M_2=40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super.

Sub-plot treatments :

6 levels of irrigation : I_0=No irrigation, I_1=Keeping the plots moist. If it rains, to drain out the water and if land is dry to irrigate it, I_2=6" constant submergence under water (without Nigar), I_3=6" constant submergence under water (with Nigar between 10th to 17th September), I_4=6" constant submergence under water (with Nigar between 15th to 22nd September) and I_5=6" constant submergence under water (with Nigar between 20th to 27th September).

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication ; 6 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 147½'×15'. (b) 144'×11½'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1959—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 3054 lb./ac. (ii) (a) 133.4 lb./ac. (b) 334.4 lb./ac. (iii) Only main effect of M is significant. (iv) Av. yield of grain in lb./ac.

	I_0	I_1	I_2	I_3	I_4	I_5	Mean
M_1	2872	2873	3287	2834	3030	2987	2981
M_2	3021	3137	3328	3025	3083	3170	3127
Mean	2947	3005	3308	2930	3057	3079	3054

S.E. of difference of two

1. M marginal means = 38.5 lb./ac.
2. I marginal means = 117.2 lb./ac.
3. I means at the same level of M = 236.5 lb./ac.
4. M means at the same level of I = 219.3 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 58(210).**

Site :- Irrigation Res. Stn., Madhepura. **Type :- 'IM'.**

Object :—To study the effect of irrigation on the yield of Aus Paddy in accordance with supply of moisture during spells of drought.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Dhaincha*. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Madhepura. (iii) N.A. (iv) (a) 6 ploughings and burying of G.M. (b) Behind the plough. (c) 30 srs./ac. (d) Between lines 10". (e) —. (v) G.M. with *dhaincha*. (vi) CH—1007. (vii) As per treatments. (viii) 1 hoeing and weeding. (ix) and (x) N.A.

2. TREATMENTS :

Main-plot treatments :

2 manurial treatments : M_1=25 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super and M_2=50 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super.

Sub-plot treatments :

2 irrigations : I_0=Control (no irrigation) and I_1=Light irrigation (not more than 2 acre inches at a time).

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication ; 2 sub-plots/main-plot. (b) N.A. (iii) 8. (iv) (a) N.A. (b) 89'×9'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1958—N.A. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1149 lb./ac. (ii) (a) 265.8 lb./ac. (b) 181.0 lb./ac. (iii) Only main effect of I is highly significant. (iv) Av. yield of grain in lb./ac.

	I_0	I_1	Mean
M_1	950	1190	1070
M_2	1112	1341	1227
Mean	1031	1266	1149

S.E. of difference of two

1. M marginal means = 94.0 lb./ac.
2. I marginal means = 64.0 lb./ac.
3. I means at the same level of M = 90.5 lb./ac.
4. M means at the same level of I = 113.7 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 59(141).**

Site :- Irrigation Res. Stn., Madhepura. **Type :- 'IM'.**

Object :—To study the effect of irrigation on the yield of Aus Paddy in accordance with supply of moisture in spells of drought.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Madhepura. (iii) 17.6.1959/ 11.7.1959. (iv) (a) 5 ploughings. (b) Japanese method. (c) 8 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) N.A. (vi) CH—1007. (vii) As per treatments. (viii) Hoeing and weeding. (ix) 43.34″. (x) 14.10.1959.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 manurial doses : M_1=25 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super and M_2=30 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super.

(2) 2 levels of irrigation : I_0=Control (no irrigation) and I_1=Light irrigation (not more than 2 acre inches at a time after a spell of, 10 days' drought).

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) 100′×11′. (b) 97 ×9′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1959—1961. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 397 lb./ac. (ii) 83.5 lb./ac. (iii) No effect is significant. (iv) Av. yield of grain in lb./ac.

	I_0	I_1	Mean
M_1	299	426	362
M_2	429	436	432
Mean	364	431	397

S.E. of M or I marginal mean = 26.4 lb./ac.
S.E. of body of table = 35.4 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 58(209).**

Site :- Irrigation Res. Stn., Madhepura. **Type :- 'IM'.**

Object :—To study the effect of irrigation in accordance with supply of moisture in spells of drought upto flowering stage on the yield of late Aman Paddy.

1. BASAL CONDITIONS :

(i) Nil. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Madhepura. (iii) N.A. (iv) (a) 6 ploughings. (b) Japanese method. (c) 8 srs./ac. (d) 12″×12″. (e) 2 to 3. (v) N.A. (vi) 498—2A. (vii) As per treatments. (viii) Hoeing and weeding twice. (ix) and (x) N.A.

2, TREATMENTS :

Main-plot treatments :

2 manurial doses : M_1=25 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super, {M_2=50 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super.

Sub-plot treatments :

4 levels of irrigation : I_0=Control (no irrigation), I_1=Irrigation at 6 days interval at 2 acre inches, I_2= Irrigation at 9 days interval at 2.5 acre inches and I_3=Irrigation at 12 days interval at 3 acre inches.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication ; 4 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 92′×13′. (b) 90′×11′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Water logged. Stalking of plants was done to prevent lodging. (ii) Attack of *gundli* bug—5% BHC. dusted. (iii) Grain and straw yield. (iv) (a) 1958—contd. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) Heavy rains. (vii) Nil.

5. RESULTS :

(i) 2619 lb./ac. (ii) (a) 546.3 lb./ac. (b) 362.9 lb./ac. (iii) No effect is significant. (iv) Av. yield of grain in lb./ac.

	I_0	I_1	I_2	I_3	Mean
M_1	2723	2420	2730	2872	2686
M_2	2533	2414	2437	2819	2551
Mean	2628	2417	2584	2846	2619

S.E. of difference of two
1 M marginal means = 193.1 lb./ac.
2. I marginal means = 181.5 lb./ac.
3. I means at the same level of M = 256.6 lb./ac.
4. M means at the same level of I = 294.4 lb./ac.

Crop :- Paddy. **Ref :- Bh. 59(139).**

Site :- Irrigation Res. Stn., Madhepura. **Type :- 'IM'.**

Object :—To study the effect of irrigation in accordance with supply of moisture in spells of drought upto flowering stage on the yield of late Aman Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis. Madhepura. (iii) 7.6.1959/ 9.7.1959. (iv) (a) 6 ploughings. (b) Japanese method. (c) 8 srs./ac. (d) 12″×12″. (e) 2 to 3. (v) N.A. (vi) 498—2A. (vii) As per treatments. (viii) Hoeing and weeding twice. (ix) 49.22″. (x) 9.12.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 58 (209) on page 207.

4. GENERAL :

(i) and (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1958—contd. (b) No. (c) Nil (v) to (vii) Nil.

5. RESULTS :

(i) 2251 lb./ac. (ii) (a) 162.1 lb./ac. (b) 159.6 lb./ac. (iii) Main effects of M and interaction M×I are significant. (iv) Av. yield of grain in lb./ac.

	I_0	I_1	I_2	I_3	Mean
M_1	2039	2200	2155	2131	2131
M_2	2199	2355	2704	2225	2371
Mean	2119	2278	2430	2178	2251

S.E. of difference of two
1. M marginal means = 57.3 lb./ac.
2. I marginal means = 79.8 lb./ac.
3. I means at the same level of M = 112.9 lb./ac.
4. M means at the same level of I = 113.3 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 57 (101).**

Site :-Agri. Res. Instt., Kanke. **Type :- 'D.'**

Object :—To find out the effect of treatings seeds and spraying Bordeaux mixture on the incidence of leaf-spot disease of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Wheat. (c) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy loam. (b) Refer soil analysis, Kanke. (iii) 24.6.1957/17.8.1957. (iv) (a) 4 ploughings. (b) Transplanting in line. (c) 7 srs./ac. (d) 10″×10″. (e) N.A. (v) 20 lb./ac. N as A/S+40 lb./ac. of P_2O_5 as Super at the time of puddling ; 20 lb./ac. of N as A/S 3 weeks after transplanting. (vi) BK—36 (late). (vii) Unirrigated. (viii) One hoeing and weeding. (ix) 39.91″. (x) 23.12.1957.

2. TREATMENTS :

4 treatments : S_0=Control (no seed dressing and no spraying), S_1=seed dressing only, S_2=Seed dressing+one spraying of Bordeaux mixture and S_3=Seed dressing+two sprayings of Bordeaux mixture.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) 88′8″×43′6″. (iii) 6. (vi) (a) 42′6″×14′2″. (b) 40′8″×12′4″. (v) One row alround the plot. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Attack of *gundli* bug. (iii) Tiller no. straw and grain yield. (iv) (a) 1957—1959. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 750 lb./ac. (ii) 291.1 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	S_0	S_1	S_2	S_3
Av. yield	746	668	642	945

S.E./mean = 118.8 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 58 (37).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'D.'**

Object :—To study the effect of hormone treatment of seed on growth, physiology and yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Reddish sandy. (b) Refer soil analysis, Kanke. (iii) N.A./24.8.1958. (iv) (a) Three ploughings. (b) Japanese method. (c) N.A. (d) 1′×1′. (e) 3 (v) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super, ¾th at transplanting and ¼th a month later. (vi) BK—88. (vii) Unirrigated. (viii) 3 weedings. (ix) 14.17″. (x) 22.11.1958.

2. TREATMENTS :

Main-plot treatments :

2 durations of soaking : T_1=4 and T_2=12 hours.

Sub-plot treatments :

All combinations of (1) and (2) +a control (H_0D_0=no soaking).

(1) 3 harmones : H_1=I.A.A., H_2=2—4—D and H_3=N.A.A.

(2) 2 doses : D_1=25 ppm and D_2=10 ppm.

3. DESIGN :

(i) Spilt-plot. (ii) (a) 2 main-plots/replication ; 7 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 14′×11′. (b) 12′×9′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Biometric observations and grain yield. (iv) (a) 1958—contd. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 3217 lb./ac. (ii) (a) 26.3 lb./ac. (b) 461.6 lb./ac. (iii) No effect is significant. (iv) Av. yield of grain in lb./ac.

	H_0D_0	H_1D_1	H_2D_1	H_3D_1	H_1D_2	H_2D_2	H_3D_2	Mean
T_1	3451	3679	3199	2773	2808	3243	3262	3203
T_2	3223	3484	3377	2862	2888	3484	3199	3231
Mean	3390	3582	3288	2818	2848	3364	3231	3217

S.E. of difference of two

1. T marginal means = 7.0 lb./ac.
2. HD marginal means = 230.8 lb./ac.
3. HD means at the same level of T = 326.4 lb./ac.
4. T means at the same level of HD = 302.3 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 59(17).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'D'.**

Object :—To study the effect of harmone treatment of seed on growth, physiology and yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Reddish sandy. (b) Refer soil analysis, Kanke. (iii) 18.6.1959./ 3.8.1959. (iv) (a) 3 ploughings and levelling. (b) Japanese method. (c) N.A. (d) 10″×10″. (e) N.A. (v) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super, ¾th at transplanting and ¼th one month after. (vi) BK—88. (vii) Unirrigated. (viii) 3 weedings. (ix) 29.13″. (x) 7.12.1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(37) on page 209.

5. RESULTS :

(i) 2233 lb./ac. (ii) (a) 447.6 lb./ac. (b) 385.9 lb./ac. (iii) No effect is significant. (iv) Av. yield of grain in lb./ac.

	H_0D_0	H_1D_1	H_2D_1	H_3D_1	H_1D_2	H_2D_2	H_3D_2	Mean
T_1	2121	2106	2050	2201	2315	2208	2234	2176
T_2	2245	2142	2252	2721	2263	2004	2393	2289
Mean	2183	2124	2151	2461	2289	2106	2314	2233

S.E. of difference of two

1. T marginal means = 119.6 lb./ac.
2. H D marginal means = 192.9 lb./ac.
3. H D means at the same level of T = 272.9 lb./ac.
4. T means at the same level of H D = 884.9 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 58(30).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'D'.**

Object :—To study the effect of different groups of harmones as aerial sprays on growth, physiology and yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Reddish sandy. (b) Refer soil analysis, Kanke. (iii) N.A./ 7.8.1958. (iv) (a) (a) 3 ploughings. (b) Japanese method. (c) N.A. (d) 1′×1′. (e) 3. (v) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as super. ¾th at transplanting and ¼th a month later. (vi) BK—88. (vii) Unirrigated. (viii) 3 weedings. (ix) 16.06″. (x) 16.11.1958.

2. TREATMENTS :

All combinations of (1) and (2)+a control (HoDo)

(1) 3 harmones : H_1=I.A.A, H_2=N.A.A. and H_3=2—4—D.

(2) 2 levels of harmones : D_1=25 ppm and D_2=100 ppm.

The experiment was done at three stages of plant growth *viz.*—S_1=At tillering (12.9.1958) S_2=Before flowering (10.10.1958) and S_3=At flowering (30.10.1958) stages.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 5. (iv) (a) 14′×10.5′. (b) 12′×9′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Biometric obeservations and grain yield. (iv) (a) 1958—N.A. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) and (ii) As below. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	S_1	S_2	S_3
H_0D_0	3314	3412	3466
H_1D_1	2968	2728	3484
H_2D_1	3200	2942	3359
H_3D_1	3119	2888	3021
H_1D_2	2666	3279	3652
H_2D_2	2862	2728	2977
H_3D_2	3075	2897	3386
G.M	3029	2982	3335
S.E./plot	515.1	506.8	720.0
S.E./mean	230.3	226.7	322.0

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 59(8).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'D'.**

Object :—To study the effect of different groups of harmones as aerial sprays on the yield of Paddy.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Reddish sandy. (b) Refer soil analysis, Kanke. (iii) N.A./ 8.8.1959. (iv) (a) 3 ploughings. (b) Japanese method. (c) N.A. (d) 10″×10″. (e) 3. (v) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super ; ¾th applied at transplanting and ¼th a month later. (vi) BR—88. (vii) Unirrigated. (viii) 3 weedings. (ix) 18.5″. (x) 19.10.1959.

2. TREATMENTS :

Main-plot treatments :

All combinations of (1) and (2)+a control (HoDo)

(1) 3 harmones : H_1=I.A.A., H_2=N.A.A. and H_3=2—4—D.

(2) 2 levels of harmones : D_1=25 ppm and D_2=100 ppm.

Sub-plot treatments :

3 stages of plant growth : S_1=at tillering (22.9.1959), S_2=at preflowering (18.10.1959) and S_3=at flowering (3.11.1959).

3. DESIGN :

(i) Split-plot. (ii) (a) 7 main-plots/replication ; 3 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a) 14′×11′. (b) 12′×9′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Biometric observations and grain yield. (iv) (a) 1958—N.A. (b) No. (c) Nil. (v) and (vi) Nil. (vii) Design is modified in 1959.

5. RESULTS :

(i) 2709 lb./ac. (ii) (a) 520.8 lb./ac. (b) 506.8 lb./ac. (iii) No effect is significant. (iv) Av. yield of grain in lb./ac.

	H_0D_0	H_1D_1	H_1D_2	H_2D_1	H_2D_2	H_3D_1	H_3D_2	Mean
S_1	2762	2628	3043	2664	2723	2688	2654	2737
S_2	2296	2951	3262	2516	2261	2359	3231	2697
S_3	2224	3058	2542	2426	2424	3412	2758	2692
Mean	2427	2879	2950	2535	2469	2820	2881	2709

S.E. of difference of two

1. HD marginal means = 245.5 lb./ac.
1. S marginal means = 156.4 lb./ac.
3. S means at the same level of HD = 413.2 lb./ac.
4. HD means at the same level of S = 416.4 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 58(249).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'D'.**

Object : To find out the efficacy of different insecticides on incidence of Paddy gall-fly.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Red laterite. (b) Refer soil analysis, Kanke. (iii) N.A. (iv) (a) 3 ploughings by *desi* plough. (b) Japanese method. (c) 7 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) Nil. (vi) Local. (vii) Irrigated. (viii) 1 weeding. (ix) and (x) N.A.

2. TREATMENTS :

4 insecticidal treatments : M_0=Control, M_1=Folidol 0.04%, M_2=Endrine 0.04% and M_3=Basudin 0.02%. Insecticides sprayed once, twice and thrice.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 3. (iv) (a) N A. (b) 33′×33′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Gall-fly incidence—control measures as per treatments. (iii) Grain and straw yield. (iv) (a) 1957—1958. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) to (iv) Av. yield of grain in lb./ac.

Treatment	One spraping	Two spraying	Three spraying
M_0	699.4	754.5	1131.4
M_1	767.7	843.4	1220.2
M_2	1083.6	1060.6	1748.5
M_3	877.9	808.8	1069.6
G.M.	857.2	866.8	1292.4
S.E./plot	165.33	220.89	162.47
S.E./mean	95.45	127.53	93.80
Significance	N.S.	N.S.	H.S.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 59(203).**

Site :- Agri. Res. Instt., Patna. **Type :- 'D'.**

Object :—To evaluate the efficacy of Endrine and Folidol sprays in controlling Paddy pests.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Heavy clay. (b) Refer soil analysis, Patna. (iii) N.A. (iv) (a) 3 ploughings by *desi* plough. (b) Japanese method. (c) 7 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) 20 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super. (vi) BR—34. (vii) Irrigated. (viii) Weeding and hoeing. (ix) and (x) N.A.

2. TREATMENTS :

5 sprayings : F_0=Control (no spraying), F_1= One spraying of Folidol 0.04%, F_2=Two sprayings of Folidol 0.04% at 15 days interval. F_3= One spraying of Endrine 0.04% and F_4=Two sprayings of Endrine 0.04% at 15 days interval.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) and (b) 1/40 ac. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) to (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 3544 lb./ac. (ii) 449.2 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	F_0	F_1	F_2	F_3	F_4
Av yield	3285	3439	3638	3575	3785

S.E./mean = 200.9 lb./ac.

Crop :- Paddy ***(Kharif).*** **Ref :- Bh. 59(204).**

Site :- Agri. Res. Instt., Patna. **Type :- 'D'.**

Object :—To find out the comparative efficacy of different insecticides in controlling Paddy pests.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Heavy clay. (b) Refer soil analysis, Patna. (iii) N.A. (iv) (a) 3 ploughings by *desi* plough. (b) Japanese method. (c) 7 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (vi) CH—1039. (vii) Irrigated. (viii) Weeding and earthing up (ix) and (x) N.A.

2. TREATMENTS :

4 insecticidal sprays : S_0=Control(no spraying), S_1=Aldrin 5% dust at 20 lb./ac., S_2=BHC 5% dust at 20 lb./ac. and S_3=Dieldrin 5% dust at 20 lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 7. (iv) (a) N.A. (b) 1/40 ac. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) to (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 1709 lb./ac. (ii) 27.7 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	S_0	S_1	S_2	S_3
Av. yield	2487	1458	1441	1449

S.E./mean = 10.5 lb./ac.

Crop :-Paddy ***(Kharif).*** **Ref :- Bh. 57 (151).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'D'.**

Object :—To find out a suitable weedicide on paddy as post-emergence spray.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) and (b) N.A. (iii) N.A./5.8.1957. (iv) (a) 3 ploughings. (b) Japanese method. (c) 6 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) 20 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super at the time of puddling. 20 lb./ac. of N as A/S 3 weeks after transplanting. (vi) BK—115. (vii) Unirrigated. (viii) Hoeing and weeding as per treatments. (ix) 6.71″. (x) 29 and 30.11.1957.

2. TREATMENTS :

All combinations of (1) and (2)+a control (hand weeding).

(1) 5 weedicides : W_1=Fernoxone, W_2=Spontex, W_3=Kathon—7, W_4=Agroxone and W_5=2, 4, 5—T Hexamene.

(2) 2 concentrations : C_1=12 oz./ac. and C_2=16 oz./ac. of acid equivalent.

3. DESIGN :

(i) R.B.D. (ii) (a) 11. (b) N.A. (iii) 4. (iv) (a) 30′×10½′. (b) 28′×9′. (v) 12″×9″. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) Mild attack of *gundli* bug was noted—BHC powder at 25 lb./ac. was dusted. (iii) Grain and straw yield. (iv) (a) 1957—1958. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2749 lb./ac. (ii) 494.6 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

Control = 2566 lb./ac.

	W_1	W_2	W_3	W_4	W_5	Mean
C_1	2620	2824	2853	2696	2160	2631
C_2	2777	3155	3220	2739	2620	2902
Mean	2699	2990	3037	2718	2390	2767

S.E. of W marginal mean = 174.9 lb./ac.
S.E. of C marginal mean = 110.6 lb./ac.
S.E. of body of table or control mean = 247.3 lb./ac.

Crop :- Paddy *(Kharif)*. **Ref :- Bh. 58 (151).**
Site :- Agri. Res. Instt., Sabour. **Type :- 'D'.**

Object :—To find out a suitable weedicide for Paddy as post-emergence spray.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) and (b) N.A. (iii) N.A./12, 13.8.1958. (iv) (a) 4 ploughings. (b) Japanese method. (c) 8 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) 20 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super on 12.8.1958 and 20 lb./ac. N as A/S on 18.9.1958. (vi) BK—115. (vii) Irrigated. (viii) 1 weeding. (ix) 26.82″. (x) 13.12.1958.

2. TREATMENTS :

Same as in expt. no 57 (151) on page 213.

3. DESIGN :

(i) R.B.D. (ii) (a) 11. (b) N.A. (iii) 3. (iv) (a) 33′×11′. (b) 31′×9′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Mild attack of stem-borer. (iii) Grain and straw yield. (iv) (a) 1957—1958. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) N.A.

5 RESULTS

(i) 1801 lb./ac. (ii) 486.0 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

Control = 2469 lb./ac.

	W_1	W_2	W_3	W_4	W_5	Mean
C_1	2141	1860	1679	1512	1833	1805
C_2	2034	1378	1606	1900	1399	1663
Mean	2088	1619	1643	1706	1616	1734

S.E. of W marginal mean = 198.4 lb./ac.
S.E. of C marginal mean = 125.5 lb./ac.
S.E. of body of W×C table = 280·6 lb./ac.

Crop :- Wheat. **Ref :- Bh. 54(6).**

Site :- Govt. Agri. Farm, Banka. **Type :- 'M'.**

Object :—To test the effect of potash on the yield of Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Dhaincha.* (c) N.A. (ii) (a) Heavy clayey loam. (b) N.A. (iii) 7.12.1954. (iv) (a) Field ploughed by *desi* plough. (b) Behind the plough. (c) 40 srs./ac. (d) Row to row 1′. (e) N.A. (v) Nil. (vi) NP—52 (late). (vii) Irrigated. (viii) Nil. (ix) 2.06″. (x) 4.4.1955.

2. TREATMENTS :

5 manurial treatments : M_0=Control (no manure), M_1=40 lb./ac. of N as A/S, $M_2=M_1+40$ lb./ac. of P_2O_5 as Super, $M_3=M_1+40$ lb./ac. of K_2O as Mur. Pot. and $M_4=M_3+40$ lb./ac. of P_2O_5 as Super.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 1/40 ac. (v) 2′×2′. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1954—1955. (b) and (c) No. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 625 lb./ac. (ii) 159.0 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	293	617	720	722	774

S.E./mean = 79.5 lb./ac.

Crop :- Wheat *(Rabi).* **Ref :- Bh. 55(202).**

Site :- Govt. Agri. Farm, Banka. **Type :- 'M'.**

Object :—To test the effect of potash on the yield of Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Jowar* and *dhaincha.* (c) N.A. (ii) (a) Clayey. (b) N.A. (iii) 16.11.1955/N.A. (iv) (a) 3 ploughings by *desi* plough. (b) Behind the plough in rows. (c) 40 srs./ac. (d) Row to row 1′. (e) N.A. (v) 20 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super at sowing time behind the plough followed by beaming. (vi) NP—52 (late). (vii) Irrigated. (viii) Weeding. (ix) 1.39″. (x) 8.4.1956.

2. TREATMENTS :

Same as in expt. no. 54(6) above.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 1/40 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1954—1955. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1071 lb./ac. (ii) 306 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	607	1029	1198	1144	1378

S.E./mean = 153 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 55 (203).**

Site :- Govt. Agri. Farm, Banka. **Type :- 'M'.**

Object :—To find the best method of applying fertilizers to Wheat crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (ii) (a) Clayey. (b) N.A. (iii) 14.11.1955. (iv) (a) 3 ploughings by *desi* plough. (b) Behind the plough in rows. (c) 40 srs./ac. (d) Row to row 1′. (e)—. (v) Nil. (vi) NP—52 (late). (vii) Irrigated. (viii) One and weeding. (ix) 1.39″. (x) 9.4.1956.

2. TREATMENTS :

3 methods of applying fertilizers : M_1=By broadcasting, M_2=With the seed and M_3=Below the seed. 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super applied.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 1/40 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1955—1957. (b) No. (c) Nil. (v) (a) and (b) N.A (vi) and (vii) Nil.

5 RESULTS :

(i) 1280 lb./ac. (ii) 168 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatmtent	M_1	M_2	M_3
Av. yield	1159	1306	1374

S.E./mean = 69 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 56 (119).**

Site :- Govt. Agri. Farm, Banka. **Type :- 'M'.**

Object :—To find the best method of applying fertilizers to Wheat crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 40 lb./ac. of N as A/S+40 lb./ac. P_2O_5 as Super. (ii) (a) Clayey. (b) N.A. (iii) 27.11.1956. (iv) (a) 3 ploughings by *desi* plough (b) Behind the plough in rows. (c) 40 srs./ac. (d) Rows 1′ apart. (e)—. (v) Nil. (vi) NP—52 (late). (vii) Irrigated. (viii) 1 hand weeding. (ix) 4.21″. (x) 8.4.1957.

2. TREATMENTS :

Same as in expt. no. 55(203) on page 216.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) 1/30 ac. (b) 1/40 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1955—1957. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 597 lb./ac. (ii) 72.4 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3
Av. yield	503	665	624

S.E./mean = 29.6 lb./ac.

Crop :- Wheat ***(Rabi).*** **Ref :- Bh. 57(72).**

Site :- Govt. Agri. Farm, Banka. **Type :- 'M'.**

Object :—To find the best method of applying fertilizers to Wheat crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (ii) (a) Clayey. (b) N.A. (iii) 1.12.1957. (iv) (a) 3 ploughings by *desi* plough. (b) Behind the plough. (c) 40 srs./ac. (d) Row to row 1′. (e) —. (v) Nil. (vi) NP—52 (late). (vii) Irrigated. (viii) 1 weeding by hand. (ix) 0.40″. (x) 5.4.1958.

2. TREATMENTS :

Same as in expt. no. 55(203) on page 216.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 56(119) on page 216.

5. RESULTS :

(i) 466 lb./ac. (ii) 76.5 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3
Av. yield	471	504	422

S.E./mean = 31.2 lb./ac.

Crop :- Wheat ***(Rabi).*** **Ref :- Bh. 57(228).**

Site :- Bot. Sub-Stn. Bikramganj. **Type :- 'M'.**

Object :—To find out the best method of applying fertilizers to Wheat crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 16.12.1957. (iv) (a) 4 ploughings. (b) Line sowing. (c) 40 srs./ac. (d) Row to row 1′. (e) —. (v) Nil. (vi) NP—52 (late). (vii) Irrigated. (viii) 2 weedings. (ix) 1.05″. (x) 10, 11.4.1959.

2. TREATMENTS :

Same as in expt. no. 55(203) on page 216.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 7. (iv) (a) 42′×19½′. (b) 40′×18′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Grain and straw yield. (iv) (a) to (c) No. (v) (a) Banka. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 585 lb./ac. (ii) 85.1 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3
Av. yield	596	614	545

S.E./mean = 32.2 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 56(140).**
Site :- Citrus Res. Stn., Chianki. **Type :- 'M'.**

Object :—To find out the best method and time of applying G.M. to Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai* (G.M.). (c) 30 lb./ac. of P_2O_5 as Super. (ii) (a) Clayey loam. (b) N.A. (iii) 19, 20.11.1956. (iv) (a) 4 ploughings. (b) Behind the plough. (c) 80 lb./ac. (d) Row to row 10″. (e) —. (v) 20 lb./ac. of P_2O_5 as Super at sowing. (vi) BR—319. (vii) Irrigated. (viii) Weeding and hoeing. (ix) 2.54″. (x) 24.4.1957.

2. TREATMENTS :

T_1=Control.
T_2=*Sanai* sown in 1st week of July and buried in mid August.
T_3=*Sanai* sown in 1st week of July and spreading in mid August and turned in 1st week of September.
T_4=*Sanai* sown in 1st week of July and spreading in mid August and turned in last week of September.

3. DESIGN:

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 69′×17′. (b) 68′×16′. (v) 6″×6″. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1956—1957. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 417 lb./ac. (ii) 82.44 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_1	T_2	T_3	T_4
Av. yield	384	432	422	429

S.E./mean = 33.7 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 57(103).**
Site :- Citrus Res. Stn., Chianki. **Type :- 'M'.**

Object :—To find out the best method and time of applying G.M. to Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) 30 lb./ac. of P_2O_5 as Super. (ii) (a) Clayey loam. (b) N.A. (iii) 4, 5.11.1957. (iv) (a) 4 ploughings. (b) Through seed tube. (c) 80 lb./ac. (d) Row to row 10″. (e) —. (v) 20 lb./ac. of P_2O_5 as Super at sowing. (vi) BR—319. (vii) Unirrigated. (viii) Nil. (ix) 1.99″. (x) 20.4.1958.

2. TREATMENTS

Same as in expt. no. 56(140) on page 218.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 37½′×30′. (b) 36½′×29′. (v) 6″×6″. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1956—1957. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 646 lb./ac. (ii) 149.7 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_1	T_2	T_3	T_4
Av. yield	529	564	781	708

S.E./mean = 61.1 lb./ac.

Crop :- Wheat *(Rabi.)* **Ref :- Bh. 55 (207).**

Site :- Citrus Res. Stn., Chianki. **Type :- 'M'.**

Object :—To find out the best method of applying fertilizers to Wheat crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) G.M. applied. (ii) (a) Clayey loam. (b) N.A. (iii) 20 to 22.12.1955. (iv) (a) 4 ploughings. (b) Behind the plough. (c) 80 lb./ac. (d) Row to row 10″. (e)—. (v) Nil. (vi) NP—52. (vii) Irrigated. (viii) 2 weedings. (ix) 2.04″. (x) 12, 13.4.1956.

2. TREATMENTS :

40 lb./ac. of N as A/S+50 lb./ac. of P_2O_5 as Super applied : M_1=By broadcasting, M_2=With the seed and M_3=Below the seed.

3. DESIGN :

(i) R B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) 62′×20′. (b) 60′×18′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Not satisfactory. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1955—1957. (b) No. (c) Nil. (v) (a) Banka and Bikramganj. (b) Nil. (vi) Heavy rain on 28.11.1956. (vii) Germination not satisfactory due to lack of moisture and irrigation.

5. RESULTS :

(i) 451 lb./ac. (ii) 78.5 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3
Av. yield	402	395	555

S.E./mean = 32.0 lb./ac.

Crop :- Wheat *(Rabi.)* **Ref :- Bh. 56 (139).**

Site :- Citrus Res. Stn., Chianki. **Type :- 'M'.**

Object :—To find out the best method of applying fertilizers to Wheat crop.

1. BASAL CONDITIONS

(i) (a) Nil. (b) Paddy. (c) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (ii) (a) Clayey loam. (b) N.A. (iii) 17.12.1956. (iv) (a) 4 ploughings. (b) Behind the plough. (c) 40 srs./ac. (d) Row to row—10″. (e) —. (v) Nil. (vi) BR—319. (vii) Irrigated. (vii) 2 weedings. (ix) 2.25″. (x) 16 to 19.4.1957.

2. TREATMENTS :

Same as in expt. no. 55 (207) on page 219.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 8. (iv) (a) 35′×17′. (b) 34′×16′. (v) 6″×6″. (vi) Yes.

4. GENERAL :

(i) Nil. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1955—1957. (b) No. (c) Nil. (v) (a) Banka and Bikramganj. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 560 lb./ac. (ii) 108.9 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3
Av. yield	484	527	669

S.E./mean = 38.5 lb./ac.

Crop :- Wheat ***(Rabi).*** **Ref :- Bh. 57(102).**

Site :- Citrus Res. Stn., Chianki. **Type :- 'M'.**

Object :—To find out the best method of applying fertilizers to Wheat crop.

1 BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (ii) (a) Clayey loam. (b) N.A. (iii) 28.12.1957. (iv) (a) 4 ploughings. (b) Behind the plough. (c) 80 lb./ac. (d) Row to row 10″. (e) —. (v) Nil. (vi) BR—319. (vii) Unirrigated. (viii) 2 weedings. (ix) 2.07″. (x) 10, 11, 12.4.1958.

2. TREATMENTS :

Same as in expt. no. 55(207) on page 219.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 8. (iv) (a) 37′×15′. (b) 36′×14′. (v) 6″×6″. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1955—1957. (b) No. (c) Nil. (v) (a) Banka, Bikramganj and Kanke. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 628 lb./ac. (ii) 157.8 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3
Av. yield	504	699	680

S.E./mean = 55.8 lb./ac.

Crop :- Wheat ***(Rabi).*** **Ref :- Bh. 56(128).**

Site :- Naya Dumka Farm, Dumka. **Type :- 'M'.**

Object :—To compare the effect of different kinds of phosphates on Wheat yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) Nil. (ii) (a) Clay loam. (b) N.A. (iii) 3.12.1956. (iv) (a) 5 ploughings by *desi* plough and beaming. (b) Sown in lines behind hoe. (c) 80 lb./ac. (d) Line to line 10″. (e) Nil. (v) Nil. (vi) NP—755. (vii) Irrigated. (viii) Weeding. (ix) 6.54″. (x) 5.4.1957.

2. TREATMENTS :

6 manurial treatments : M_0=Control (no manure), M_1=40 lb./ac. of N as A/S, $M_2=M_1$+40 lb./ac. of P_2O_5 as Super, $M_3=M_1$+40 lb./ac. of P_2O_5 as B.M., $M_4=M_1$+40 lb./ac. of P_2O_5 as Rock Phos. and $M_5=M_1$+40 lb./ac. of P_2O_5 as Dical Phos.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) 110′×34′. (iii) 4. (iv) (a) and (b) 34′×16′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Poor germination. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1956—1958. (b) Yes. (c) Nil. (v) (a) N.A. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 268 lb./ac. (ii) 165.8 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	134	123	466	313	201	370

S E./mean = 82.9 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 57(108).**

Site :- Naya Dumka Farm, Dumka. **Type :- 'M'.**

Object :—To compare the effect of different kinds of phosphates on Wheat yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 20 lb./ac. of N as A/S+30 lb./ac. of P_2O_5 as Super. (ii) (a) Clay loam. (b) N.A. (iii) 2.12.1957. (iv) (a) 4 ploughings by *desi* plough and beaming by *hinga* twice. (b) In lines behind hand hoe. (c) 80 lb./ac. (d) Line to line 10″. (e) —. (v) Nil. (vi) NP—52. (vii) Irrigated. (viii) Nil. (ix) 0.11″. (x) 26.3.1958.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 56(128) above.

4. GENERAL :

(i) Not satisfactory. (ii) Nil. (iii) No. of tillers, grain and straw yield. (iv) (a) 1956—1958. (b) Yes. (c) Nil. (v) (a) and (b) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 393 lb./ac. (b) 181.0 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	201	257	664	469	250	517

S.E./mean = 90.5 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 58(83).**

Site :- Naya Dumka Farm, Dumka. **Type :- 'M'.**

Object :—To study the comparative effect of different kinds of phosphates on Wheat yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (ii) (a) Clayey loam. (b) N.A. (iii) 2.12.1958. (iv) (a) 4 ploughings, two beamings by *hinga*. (b) Behind the plough. (c) 80 lb./ac. (d) Line to line 10″. (e) —. (v) Nil. (vi) NP—52. (vii) Irrigated. (viii) 1 hoeing. (ix) 2.4″ (x) 28.3.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 56(128) on page 220.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain and straw yield. (iv) 1956—1958. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 786 lb./ac. (ii) 178.6 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	567	494	1220	705	661	1071

S.E./mean = 89.3 lb./ac.

Crop :- Wheat. **Ref :- Bh. 55(49).**

Site :- Naya Dumka Farm, Dumka. **Type :- 'M'.**

Object :—To test the effect of potash on the yield of Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 30 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy loam. (b) N.A. (iii) 20.11.1955. (iv) (a) 8 ploughings with *desi* plough. (b) Behind the hoe. (c) 80 lb./ac. (d) Row to row 10″. (e) —. (v) Nil. (vi) BR—319 (early). (vii) Weeding and hoeing. (ix) 5.68″. (x) 25.3.1956.

2. TREATMENTS :

Same as in expt. no. 54(6) on page 215.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) and (b) 30′×18′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Grain and straw yield ; height of plants and tillering. (iv) (a) 1955—1958. (c) No (b) Nil. (v) (a) All Agricultural Research Station. (b) N.A. (vi) and (vi) Nil.

RESULTS :

(i) 2127 lb./ac. (ii) 164.6 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	1502	2302	2271	2219	2343

S.E./mean = 82.3 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 56(127).**

Site :- Naya Dumka Farm, Dumka. **Type :- 'M'.**

Object :—To test the effect of potash on the yield of Wheat.

1. BASAL CONDITIONS:

(i) (a) Nil. (b) Paddy. (c) Nil. (ii) (a) Clay loam. (b) N.A. (iii) 30.11.1956. (iv) (a) 4 ploughings by *desi* plough and 2 beaming. (b) Sown in lines behind hand hoe. (c) 80 lb./ac. (d) Rows 10″ apart. (e) —. (v) Nil. (vi) BR—319 (early). (vii) Irrigated. (viii) Weeding. (ix) 65.4″. (x) 4.4.1957.

2. TREATMENTS:

Same as in expt. no. 54(6) on page 215.

3. DESIGN :

()! R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) and (b) 30′×18′. (v) N. A. (vi) Yes.

4. GENERAL :

(i) Not good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1955—1958. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 484.2 lb./ac. (ii) 122.8 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	226	264	718	334	879

S.E./mean = 61.4 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 57(107).**

Site :- Naya Dumka Farm, Dumka. **Type :- 'M'.**

Object :—To test the effect of potash on the yield of Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) Nil. (ii) (a) Clay loam. (b) N.A. (iii) 27.11.1957. (iv) (a) 4 ploughings and beaming twice by *hinga*. (b) Sown in lines behind hoe. (c) 80 lb./ac. (d) Rows 10" apart. (e) —. (v) Nil. (vi) BR—319 (early). (vii) Irrigated. (viii) Nil. (ix) 0.11". (x) 26.3.1958.

2. TREATMENTS :

Same as in expt. no. 54(6) on page 215.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 56(127) on page 222.

5. RESULTS :

(i) 811 lb./ac. (ii) 202.3 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	586	658	1053	679	1079

S.E./mean = 101.2 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 58(84).**

Site :- Naya Dumka Farm, Dumka. **Type :- 'M'.**

Object:—To test the effect of potash on the yield of Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (ii) (a) Clayey loam. (b) N.A. (iii) 15.11.1958. (iv) (a) 4 ploughings+2 beamings by *hinga*. (b) Behind the plough. (c) 80 lb./ac. (d) Line to line 10". (e) —.(v) Nil. (vi) BR—319 (early). (vii) Unirrigated. (viii) 1 hoeing, (ix) 2.4". (x) 27.3.1959.

2. TREATMENTS :

Same as in expt. no. 54(6) on page 215.

3. DESIGN :

(i) R.B,D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 30'×18'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1955—1958. (b) No. (c) Nil. (v) (a) N.A. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 800 lb./ac. (ii) 285.4 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	726	713	877	654	1032

S.E./mean = 142.7 lb./ac.

Crop :- Wheat. **Ref :- Bh. 55 (42).**

Site :- Naya Dumka Farm, Dumka. **Type :- 'M'.**

Object :—To study the manurial value of different G.M. crop on the succeeding Wheat crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Maize. (c) 30 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy loam. (b) N.A. (iii) 5.11.1955. (iv) (a) 5 ploughings with *desi* plough. (b) Sown behind the hoe. (c) 40 srs./ac. (d) and (e) —. (v) Nil. (vi) BR—319 (early). (vii) Unirrigated. (viii) Weeding and hoeing. (ix) 4.82". (x) 1.3.1956.

2. TREATMENTS :

6 manurial treatments : M_0=Control (no manure), M_1=G.M. with *Sanai*, M_2=G.M. with *Kalai*, M_3= G.M. with *Moong*, M_4=G.M. with *Guar* and M_5=G.M. with *dhaincha*.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) and (b) 33′×16.5′. (v) 2′×2′. (vi) Yes.

4. RESULTS :

(i) Very poor, no lodging. (ii) Heavy termite attack for which Aldrine spraying was done. Kerosene oil emulsion and BHC(5%) dushing was also tried without any effect. (iii) Yield of grain and straw, tillering, height of plant. (iv) (a) to (c) No. (v) (a) All Govt. farms and selected cultivators' fields. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 302 lb./ac. (ii) 135.4 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	265	321	319	193	298	413

S.E./Mean = 67.7 lb./ac.

Crop :- Wheat **Ref :- Bh. 55 (21).**

Site :- Govt. Agri. Farm, Gumla. **Type :- 'M'.**

Object :—To study the manurial value of different to G.M. crop on the succeeding Wheat crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) G.M. crops. (c) B.D. of 100 mds./ac. of F.Y.M. (ii) (a) Laterite soil. (b) N.A. (iii) 9.1.1955. (iv) (a) Ploughing by *desi* plough. (b) Sown in lines behind the plough. (c) 40 srs./ac. (d) N.A. (e) —. (v) Top dressing with 30 srs./ac. of A/S+30srs./ac. of Super. (vi) N.P. 798 (early). (vii) Irrigated. (vii) Nil. (ix) 5.00". (x) 2.4.1956 and 3.4.1956.

2. TREATMENTS :

Same as in expt. no. 55(42) above.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 11′×50′. (b) 9′×48′. (v) 1′×1′ (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of grain. (iv) (a) 1955—1957. (b) and (c) No. (v) (a) Dumka. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1166 lb./ac. (ii) 230.6 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	687	1632	1127	1360	505	1684

S.E./mean = 115.3 lb./ac.

Crop :- Wheat. **Ref :- Bh. 56(56).**

Site :- Govt. Agri. Farm, Gumla. **Type :- 'M'.**

Object :—To study the manurial value of different G.M. crops on the succeeding Wheat crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) G.M. crops. (c) 20 lb./ac. of P_2O_5 as Super. (ii) (a) Laterite soil. (b) N.A. (iii) 9.10.1956. (iv) (a) N.A. (b) Sown behind the plough. (c) 80 lb./ac. (d) and (e) N.A. (v) Nil. (vi) NP—798 (early). (vii) Irrigated. (viii) Weeding and hoeing. (ix) 7.06″. (x) 25.2.1957.

2. TREATMENTS :

Same as in expt. no. 55(42) on page 224.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) and (b) 24′×24′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Attack of rust. (iii) Yield of grain. (iv) (a) 1955—1957. (b) No. (c) Nil. (v) (a) Dumka. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 269 lb./ac. (ii) 194.9 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	165	324	412	346	187	179

S.E./mean = 97.5 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 57(119).**

Site :- Govt. Agri. Farm, Gumla. **Type :- 'M'.**

Object :—To study the manurial value of different G.M. crops on the succeeding Wheat crop.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) G.M. crops. (c) 20 lb./ac. of P_2O_5 as Super at sowing. (ii) (a) Sandy loam. (b) N.A. (iii) 9.11.1957. (iv) (a) 4 ploughings. (b) Sown behind the plough. (c) 30 srs./ac. (d) Line to line 10″. (e) —. (v) Nil. (vi) NP—798. (vii) Irrigated. (viii) Nil. (ix) 5.24″. (x) 22, 23.3.1958.

2. TREATMENTS :

5 manurial treatments : M_0=Fallow (control), M_1=G.M. with *sanai*, M_2=G.M. with *kalai*, M_3=G.M. with *moong* and M_4=G.M. with *dhaincha*.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 26′×26′. (b) 24′×24′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1955—1957. (b) No. (c) Nil. (v) (a) Kanke and Dumka. (b) Nil. (vi) and (vii) Nil.

5. RESULTS:

(i) 321 lb./ac. (ii) 82.1 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	241	265	321	333	447

S.E./mean = 41.0 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 56(247).**

Site :- Govt. Agri. Farm, Jamui. **Type :- 'M'.**

Object :—To see the effect of trace elements on Wheat yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) Calcareous. (b) N.A. (iii) 13.11.1955. (iv) (a) 4 ploughings. (b) Behind the plough. (c) 40 srs./ac. (d) Row to row 1′. (e) —. (v) Nil. (vi) NP—52. (vii) Irrigated. (viii) Weeding. (ix) N.A. (x) 4.4.1957.

2. TREATMENTS :

M_0=Control (no manure).
M_1=40 lb./ac. of N as A/S+40 lb./ac. of P as Super+40 lb./ac. of K as Mur. pot.
M_2=M_1+10 lb./ac. of Mn as $MnSO_4$.
M_3=M_1+20 lb./ac. of Mn as $MnSO_4$.
M_4=M_1+10 lb./ac. of Zn as $ZnSO_4$.
M_5=M_1+20 lb./ac. of Zn as $ZnSO_4$.
M_6=M_1+10 lb./ac. of B as Borax.
M_7=M_1+20 lb./ac. of B as Borax
M_3=M_1+10 lb./ac. of Cu as $CuSO_4$.
M_9=M_1+20 lb./ac. of Cu as $CuSO_4$.
M_{10}=M_1+10 lb./ac. of Fe as $FeSO_4$.
M_{11}=M_1+20 lb./ac. of Fe as $FeSO_4$.
M_{12}=M_1+ 1 lb./ac. of Mo as Molybdate.
M_{13}=M_1+ 2 lb./ac. of Mo as Molybdate.

DESIGN :

(i) R.B.D. (ii) (a) 14. (b) N.A. (iii) 5. (iv) (a) N.A. (b) 22′×12′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) Nil. (vii) Data for 1957 N.A.

5. RESULTS :

(i) 704 lb./ac. (ii) 139.6 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6
Av. yield	229	721	781	764	704	768	709

Treatment	M_7	M_8	M_9	M_{10}	M_{11}	M_{12}	M_{13}
Av. yield	598	721	810	658	793	810	785

S.E./mean = 62.4 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 58(302).**

Site :- Govt. Agri. Farm, Jamui. **Type :- 'M'.**

Object :—To see the effect of trace elements on Wheat yield.

1. BASAL CONDITIONS:

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Calcareous. (b) N.A. (iii) 8.11.1958. (iv) (a) 4 ploughings. (b) Behind the plough. (c) 40 srs./ac. (d) Row to row 1′. (e) —. (v) Nil. (vi) NP—52. (vii) Irrigated. (viii) Weeding. (ix) N.A. (x) 2.4.1959.

2. TREATMENTS and 3. DESIGN:

Same as in expt. no. 56(247) on page 226.

4. GENERAL:

(i) Not good. (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS:

(i) 126.7 lb./ac. (ii) 69.8 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6
Av. yield	59.4	114.5	161.2	152.7	199.4	135.8	106.1

Treatment	M_7	M_8	M_9	M_{10}	M_{11}	M_{12}	M_{13}
Av. yield	89.1	220.6	161.2	84.9	110.3	93.3	84.9

S.E./mean = 31.2 lb./ac.

Crop :- Wheat *(Rabi.)*

Ref :- Bh. 56 (164).

Site :- Agri. Res. Instt., Kanke.

Type :- 'M'.

Object :—To study the effect of organic and inorganic manures on building up the soil fertility for Wheat crop.

1. BASAL CONDITIONS:

(i) (a) Nil. (b) Maize. (c) As per treatments. (ii) (a) Red laterite. (b) Refer soil analysis, Kanke. (iii) N.A. (iv) (a) 1 ploughing followed by one spading. (b) Line sowing. (c) 80 lb./ac. (d) Rows 1′ apart. (e) —. (v) Nil. (vi) NP—319. (vii) Irrigated. (viii) Weeding and earthing. (ix) and (x) N.A.

2. TREATMENTS:

13 manurial treatments :	Fertilizers applied/plot		
	A/S	Super.	Mur. Pot.
M_0 = Control (no manure)	——	——	——
M_1 = 40 lb./ac. of N as A/S.	8 oz.	——	——
$M_2 = M_1 + x + y$.	8 oz.	7 oz.	1.3 oz.
M_3 = 40 lb./ac. of N as F.Y.M.	——	——	——
$M_4 = \frac{1}{2} M_1 + \frac{1}{2} M_3 + \frac{1}{2}x + \frac{1}{2}y$.	4 oz.	3.5 oz.	0·7 oz.
$M_5 = M_1 +$ 40 lb./ac. of P_2O_5 as Super.	8 oz.	10 oz.	——
$M_6 = M_3 + (40 - x)$ P_2O_5 as Super	——	3 oz.	——
$M_7 = \frac{1}{2}M_1 + \frac{1}{2}M_3 + (40 - x)$ P_2O_5 as Super.	4 oz.	6.5 oz.	——
$M_8 = M_5 +$ 40 lb./ac. of K_2O as Mur. Pot.	8 oz.	10 oz.	2.8 oz.
$M_9 = M_6 + (40 - y)$ K_2O as Mur. Pot.	——	3 oz.	1.5 oz.
$M_{10} = \frac{1}{2}M_1 + \frac{1}{2}M_3 + (40 - \frac{1}{2}x)$ Super $+ (40 - \frac{1}{2}y)$ Mur. Pot.	4 oz.	6.5 oz.	2.1 oz.
M_{11} = Lime + M_8.	8 oz.	10 oz,	2.8 oz.
M_{12} = Lime + M_9.	——	3 oz.	2.1 oz.

where x = Amount of P_2O_5 in F.Y.M. applied for 40 lb./ac. of N.

y = Amount of K_2O in F.Y.M. applied for 40 lb./ac. of N.

3. DESIGN:

(i) R.B.D. (ii) (a) 13. (b) N.A. (iii) 4. (iv) (a) 14′×11′. (b) 12′×9′. (v) 1′×1′. (vi) Yes.

4. GENERAL:

(i) N.A. (ii) Nil. (iii) Grain yield. (iv) (a) 1956—N.A. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS:

(i) 637 lb./ac. (ii) 201.6 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8	M_9	M_{10}	M_{11}	M_{12}
Av. yield	282	405	623	797	694	603	700	611	636	739	733	726	732

S.E./mean = 100.8 lb./ac.

Crop :- Wheat *(Rabi.)* **Ref :- Bh. 57 (136).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'M'**

Object :—To study the effect of organic and inorganic manures on building up the soil fertility for Wheat crop.

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 56(164) on page 227.

5. RESULTS :

(i) 440 lb./ac. (ii) 197.5 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8	M_9	M_{10}	M_{11}	M_{12}
Av. yield	107	173	395	584	395	395	667	535	576	453	263	543	634

S.E./mean = 98.8 lb./ac.

Crop :- Wheat *(Rabi).* **Ref :- Bh. 58(134).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'M'.**

Object :—To study the effect of organic and inorganic manures in building up the soil fertility for Wheat crop.

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 56(164) on page 227.

5. RESULTS :

(i) 1291 lb./ac. (ii) 197.5 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8	M_9	M_{10}	M_{11}	M_{12}
Av. yield	420	518	1259	1259	1605	1284	1522	1580	1251	1325	1448	2024	1292

S.E./mean = 98.8 lb./ac.

Crop :- Wheat *(Rabi).* **Ref :- Bh. 59(76).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'M'.**

Object :—To study the effect of organic and inorganic manures in building up the soil fertility for Wheat crop.

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 56(164) on page 227.

5. RESULTS :

(i) 1358 lb./ac. (ii) 706 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8	M_9	M_{10}	M_{11}	M_{12}
Av. yield	576	257	1324	1710	1479	1312	1414	1723	1581	1530	1684	1530	1530

S.E./mean = 353 lb./ac.

Crop :- Wheat ***(Rabi).*** **Ref :- Bh. 56(162).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'M'.**

Object :—To see the effect of liming the acid soil in combination with fertilizers for Wheat crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Maize. (c) As per treatments. (ii) (a) Red loam. (b) Refer soil analysis, Kanke. (iii) 13.11.1956. (iv) (a) 3 ploughings by *desi* plough. (b) Line sowing. (c) 40 srs./ac. (d) Rows 1′ apart. (e) —. (v) Nil. (vi) NP—755 (late). (vii) Irrigated. (viii) Earthing once and weeding twice. (ix) 5.20″. (x) 5.3.1957.

2. TREATMENTS :

8 manurial treatments : M_0= Control (no manure), M_1= Lime at 600 lb./ac., M_2= Lime at 1200 lb./ac., M_3= Lime at 2400 lb./ac., M_4+40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super +40 lb./ac. of K_2O as Mur. Pot., $M_5 = M_1 + M_4$, $M_6 = M_2 + M_4$ and $M_7 = M_3 + M_4$.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 6. (iv) (a) 14′×11′. (b) 12′×9′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1956—1960. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 907 lb./ac. (ii) 273.2 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7
Av. yield	621	822	540	883	917	1153	999	1320

S.E./mean = 111.5 lb./ac.

Crop :- Wheat ***(Rabi).*** **Ref :- Bh. 57(134).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'M'.**

Object :—To see the effect of liming the acid soil in combination with fertilizers for Wheat crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Maize. (c) As per treatments. (ii) (a) Red loam. (b) Refer soil analysis, Kanke. (iii) 6.10.1957. (iv) (a) 3 ploughings by *desi* plough. (b) Line sowing. (c) 40 srs./ac. (d) Rows 1′ apart. (e) —. (v) Nil. (vi) NP—755 (late). (vii) Irrigated. (viii) Earthing once and weeding twice. (ix) and (x) N.A.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 56(162) above.

5. RESULTS :

(i) 648 lb./ac. (ii) 263.3 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7
Av. yield	313	543	634	436	436	987	1045	790

S.E./mean = 107.5 lb./ac.

Crop :- Wheat *(Rabi).* **Ref :- Bh. 58(132).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'M'.**

Object :—To see the effect of liming the acid soil in combination with fertilizers for Wheat.

1. BASAL CONDITIONS :

(i) (a) Maize—Wheat—Maize. (b) Maize. (c) As per treatments. (ii) (a) Red laterite. (b) Refer soil analysis, Kanke. (iii) 5.11.1958. (iv) (a) 1 ploughing followed by one spading. (b) Line sowing. (c) 80 lbs./ac. (d) Rows 1′ apart. (e) —. (v) Nil. (vi) NP—755 (late). (vii) Irrigated. (viii) Earthing once and weeding twice. (ix) and(x) N.A.

2. TREATMENTS to 4. GENERAL:

Same as in expt. no. 56(162) on page 229.

5. RESULTS :

(i) 1213 lb./ac. (ii) 254.24 lb./ac. (iii) Treatment differences are highly significant. (vi) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7
Av. yield	739	756	694	788	1395	1679	1913	1737

S.E./mean = 103.79 lb./ac.

Crop :- Wheat *(Rabi).* **Ref :- Bh. 59(74).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'M'.**

Object :—To see the effect of liming the acid soil in combination with fertilizers for Wheat.

1. BASAL CONDITIONS :

(i) (a) Maize—Wheat—Maize. (b) Maize. (c) As per treatments. (ii) (a) Red laterite. (b) Refer soil analysis, Kanke. (iii) 11.11.1956. (iv) (a) 1 ploughing followed by one spading. (b) Line sowing. (c) 80 lb./ac. (d) Rows 1′ apart. (e)—. (v) Nil. (vi) NP—755 (late). (vii) Irrigated. (viii) Earthing once and weeding twice. (ix) and (x) N.A.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 56 (162) on page 229.

5. RESULTS :

(i) 1438 lb./ac. (ii) 199.9 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7
Av. yield	756	848	782	859	2510	1892	1929	1926

S.E./mean = 81.6 lb./ac.

Crop :- Wheat. **Ref :- Bh. 55(10).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'M'.**

Object :—To find out the best method of burying G.M. crop in Wheat field.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) Nil. (ii) (a) Clayey loam. (b) Refer soil analysis, Kanke. (iii) 4.11.1955. (iv) (a) Ploughing by *desi* plough. (b) Behind the plough. (c) 40 srs./ac. (d) Line to line 1′. (e) —. (v) Nil. (vi) NP—52 (late). (vii) Irrigated. (viii) Hoeing and weeding. (ix) 3.79″. (x) 18, 19.3.1956.

2. TREATMENTS:

6 manurial treatments: M_0=Control (no manure), M_1=*Sanai* grown and buried in *situ*, M_2=*Sanai* grown and harvested at bud stage at 6" from the ground, M_3=*Sanai* grown and harvested at 3′ from the ground, M_4=*Sanai* from M_2 plots incorporated and M_5=*Sanai* from M_3 plots incorporated.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) Nil. (iii) 6. (iv) (a) 11′×99′. (b) 9′×97′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Medium. (ii) Attacked by rats—Zinc phosphide baits used but failed. (iii) Grain and straw yield. (iv) (a) 1955—1956. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS:

(i) 878 lb./ac. (ii) 294.3 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	927	885	770	1036	803	846

S.E./mean = 120.1 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 56(83).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'M'.**

Object :—To find out the best method of burying G.M. crop in Wheat field.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Kanke. (iii) 28.10.1956. (iv) (a) 3 ploughings. (b) Broadcast. (c) 40 srs./ac. (d) Nil. (e) —. (v) 20 lb./ac. of P_2O_5 at sowing. (vi) NP—798 (early). (vii) Irrigated. (viii) Hoeing and weeding twice. (ix) 7.85″. (x) 25 to 28.2.1957.

2. TREATMENTS :

Same as in expt. no. 55(10) on page 230.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 72′×15′. (b) 71′×14′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Tiller no., grain and straw yield. (iv) (a) 1955—1956. (b) No. (c) Nil. (v) (a) Sepaya. (b) Nil. (vi) and (vii) Nil.

. RESULTS :

(i) 480.0 lb./ac. (ii) 79.3 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	420	538	518	415	534	455

S.E./mean = 39.7 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 58(36).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'M'.**

Object :—To assess the effect of aerial spray of fertilizer nutrients on growth, vigour and yield of Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Cowpea and maize. (c) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (ii) (a) Reddish sandy. (b) Refer soil analysis, Kanke. (iii) 26 to 28.10.1858. (iv) (a) 3 ploughings. (b) Behind the plough. (c) 40 srs./ac. (d) Row to row 10″. (e) —. (v) Nil. (vi) NP—798. (vii) Irrigated. (viii) Weeding and hoeing. (ix) 2.4″. (x) 31.3.1959.

2. TREATMENTS :

9 manurial treatments : M_0=Control (no manure), M_1=M+40 lb./ac. of N as Urea to soil at sowing, M_2=M+30 lb./ac. of N as Urea to soil at sowing+2.1% solution of Urea sprayed at 100 gallons/ac., M_3=M+40 lb./ac. of N as A/S to soil at sowing, M_4=M+30 lb./ac. of N as A/S to soil at sowing+4.75% solution of A/S sprayed at 100 gallons/ac., M_5=M+40 lb./ac. of N as C/N to soil at sowing, M_6=M+30, lb./ac., of N as C/N to soil at sowing+2.60% solution of C/N sprayed at 100 gallons/ac., M_7=40 lb./ac. of N as A/S to soil at sowing+40 lb./ac. of P_2O_5 as PDP to soil at sowing and M_8=40 lb./ac. of N as A/S to soil at sowing+ 30 lb./ac. of P_2O_5 as PDP to soil at sowing+4.34%solution of PDP sprayed at 100 gallons/ac.

Where M=40 lb./ac. of P_2O_5 as Super and PDP=Potassium Di-hydrogen Phosphate ; spraying of solutions is done at 3 stages (i) Tillering (ii) Pre-flowering and (iii) Grain filling.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4 (for each stage of spraying). (iv) (a) 17′×8′. (b) 15′×6′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield, study of individual plant characteristics. (iv) (a) 1958—N.A. (b) Yes. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

I. Spraying at tillering stage.

(i) 890 lb./ac. (ii) 93.8 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8
Av. yield	959	1035	736	1027	838	959	959	702	796

S.E./mean = 46.9 lb./ac.

II. Spraying at pre-flowering stage.

(i) 936 lb./ac. (ii) 162.9 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8
Av. yield	873	1078	847	1147	762	727	881	1130	976

S.E./mean = 81.5 lb./ac.

III. Spraying at grain-filling stage.

(i) 960 lb./ac. (ii) 120.1 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8
Av. yield	924	1010	873	1078	856	873	1052	881	1095

S.E./mean = 60.1 lb./ac.

Crop :- Wheat ***(Rabi).*** **Ref :- Bh. 59(7)**

Site :- Agri. Res. Instt., Kanke. **Type :- 'M'.**

Object :—To assess the effect of aerial spray of fertilizer nutrients on growth, vigour and yield of Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Maize. (c) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (ii) (a) Reddish sandy. (b) Refer soil analysis, Kanke. (iii) 8.11.1959. (iv) (a) 4 ploughings. (b) Behind the plough. (c) 40 srs./ac. (d) Row to row 10″. (e) —. (v) Nil. (vi) NP—798. (vii) Irrigated. (viii) Weeding and hoeing thrice. (ix) 1.0″. (x) 12.3.1960.

2. TREATMENTS :

Main-plot treatments :

M_0=Control (no manure applied but only water sprayed at 100 gallons/ac.)
M_1=M+40 lb./ac. of N as Urea.
M_2=M+40 lb./ac. of N as A/S.
M_3=M+40 lb./ac. of N as C/N.
M_4=40 lb /ac. of N as A/S+40 lb./ac. of P_2O_5 as KH_2PO_4.
M_5=M+30 lb./ac. of N as Urea+2.1 % solution of Urea sprayed at 100 gallons/ac.
M_6=M+30 lb./ac. of N as A/S+4.75% solution of A/S sprayed at 100 gallons/ac.
M_7=M+30 lb./ac. of N as C/N+2.6% solution of C/N sprayed at 100 gallons/ac.
M_8=40 lb./ac. of N as A/S+30 lb./ac. of P_2O_5 as KH_2PO_4+4.34% solution of KH_2PO_4 sprayed at 100 gallons/ac.

Sub-plot treatments :

Spraying of solutions done at 3 stages of plant growth : S_1=At tillering (10.1.1960), S_2=At pre-flowering (25.1.1960) and S_3=At grain-filling (17.2.1960) stage.

Where M=40 lb./ac. of P_2O_5 as Super.

3. DESIGN :

(i) Split-plot. (ii) (a) 9 main-plots/replication ; 3 sub-plots/main-plot. (iii) 3. (iv) (a) 16′×11′. (b) 15′×10′. (v) ½′ alround the plot. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield, study of individual plant characteristics. (iv) (a) 1958—N.A. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1135 lb./ac. (ii) (a) 422.1 lb./ac. (b) 241.9 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8	Mean
S_1	1121	931	876	1889	1103	1163	1196	963	1163	1156
S_2	1251	826	1474	1287	983	1254	1347	1151	1124	1189
S_3	1110	1102	895	1233	1070	1242	875	936	1073	1060
Mean	1161	953	1082	1470	1052	1220	1139	1017	1120	1135

S.E. of difference of two

1. M marginal means = 199.0 lb./ac.
2. S marginal means = 65.8 lb./ac.
3. S means at the same level of M = 197.5 lb./ac.
4. M means at the same level of S = 256.1 lb./ac.

Crop :- Wheat ***(Rabi).*** **Ref :- Bh. 58 (34).**
Site :- Agri. Res. Instt., Kanke. **Type :- 'M'.**

Object .—To assess the effectiveness of soaking seed in nutrient solution on growth and yield of Wheat.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Jowar. (c) Nil. (ii) (a) Reddish sandy. (b) Refer soil analysis, Kanke. (iii) 30.10.1958. (iv) (a) 3 ploughings. (b) Behind the plough. (c) 40 srs./ac. (d) Row to row 10″. (e) —. (v) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super applied at sowing. (vi) NP-798. (vii) Irrigated. (viii) 1 weeding and hoeing. (ix) 2.20″. (x) 2.3.1959.

2. TREATMENTS :

All combinations of (1) and (2)+a control (no seed soaking)
- (1) 6 nutrients for soaking seed : T_1=Urea, T_2=A/S, T_3=C/N, T_4=Potassium dihydrogen phosphate, T_5=Super and T_6=Pot. Sul.
- (2) 2 concentrations : D_1=Molar and D_2=Half molar.

3. DESIGN :

(i) R.B.D. (ii) (a) 13. (b) N.A. (iii) 4. (iv) (a) 17′×10′. (b) 15′×8′. (v) 3′×2′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield ; study of individual plant characteristics. (iv) (a) 1958—N.A. (b) Yes. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 782 lb./ac. (ii) 242.2 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

Control = 733 lb./ac.

	T_1	T_2	T_3	T_4	T_5	T_6	Mean
D_1	693	806	787	973	567	806	772
D_2	840	634	1026	866	587	840	799
Mean	767	720	907	920	577	823	786

S.E. of T marginal mean = 85.6 lb /ac.
S.E. of D marginal mean = 49.4 lb./ac.
S.E. of body of T×D table = 121.1 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 59(6).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'M'.**

Object :—To assess the effect of seed soaking in nutrient solutions on the yield of Wheat.

1. BASAL CONDITIONS :

(i) (a) —. (b) Maize. (c) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (ii) (a) Reddish sandy. (b) Refer soil analysis, Kanke. (iii) 10.11.1959. (iv) (a) 3 ploughings. (b) Behind the plough. (c) 40 srs./ac. (d) Row to row 10″. (e) —. (v) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super at sowing. (vi) NP-798. (vii) 1 weeding and hoeing. (ix) 0.94″. (x) 12.3.60.

2. TREATMENTS :

All combinations of (1) and (2)+a control (no seed soaking)
- (1) 5 nutrients for soaking seeds : T_1=Urea, T_2=A/S, T_3=Potassium Nitrate, T_4=Pot. dihydrogen phosphate and T_5=Pot. Sul.
- (2) 2 concentrations : C_1=Molar and C_2=Half molar.

3. DESIGN :

(i) R.B.D. (ii) (a) 11. (b) N.A. (iii) 4. (iv) (a) 17′×10′. (b) 15′×8′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield and study of individual plant characteristics. (iv) (a) 1958—N.A. (b) Yes. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1223 lb./ac. (ii) 279.8 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

Control = 1298 lb./ac.

	T_1	T_2	T_3	T_4	T_5	Mean
C_1	1211	1432	1138	1464	1093	1268
C_2	1332	1117	1128	1193	1042	1162
Mean	1272	1275	1133	1329	1068	1215

S.E. of T marginal mean = 98.9 lb./ac.
S.E. of C marginal mean = 62.6 lb./ac.
S.E. of body of T×C table = 139.9 lb./ac.

Crop :- Wheat *(Rabi).* **Ref :- Bh. 56(85).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'M'.**

Object :—To find the best method of applying fertilizers to Wheat crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Castor. (c) N.A. (ii) Sandy loam. (b) Refer soil analysis. Kanke. (iii) 21.10.1956 to 4.11.1956. (iv) (a) 3 ploughings by Bihar plough. (b) Behind the plough. (c) 40 srs./ac. (d) Rows 10" apart. (e) 2 to 3. (v) Nil. (vi) BR—319. (vii) Irrigated. (viii) Weeding and hoeing. (ix) 3.39". (x) 5, 8.3.1957.

2. TREATMENTS :

3 methods of application of manure : M_1=Broadcast, M_2=With the seed and M_3=below seed.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 8. (iv) (a) 33'×22'. (b) 31'6"×20'6". (v) 9"×9". (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Tiller number, grain and straw yield. (iv) (a) 1956—1957. (b) No. (c) Nil. (v) (a) Piprakothi and Sabour. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 814 lb./ac. (ii) 224.0 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3
Av. yield	799	802	841

S.E./mean = 79.2 lb./ac.

Crop :- Wheat *(Rabi).* **Ref :- Bh. 57(33).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'M'.**

Object :—To find out the best method of applying fertilizers to Wheat crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Groundnut. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Kanke. (iii) 20.11.1957. (iv) (a) 3 times ploughed by Bihar plough. (b) Behind the plough. (c) 40 srs./ac. (d) Rows 10" apart. (e) —. (v) Nil. (vi) BR—319. (vii) Unirrigated. (viii) 2 hoeings and 2 weedings. (ix) 3.18". (x) 4 to 7.4.1958.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 56(85) above.

5. RESULTS :

(i) 990 lb./ac. (ii) 205.8 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield grain in lb./ac.

Treatment	M_1	M_2	M_3
Av. yield	858	899	1212

S.E./mean = 72.8 lb./ac.

Crop :- Wheat. **Ref :- Bh. 54(4).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'M'.**

Object :—To study the effect of potash on the yield of Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Clay. (b) Refer soil analysis, Kanke. (iii) 7.11.1954. (iv) (a) Ploughing by *desi* plough. (b) Behind the plough. (c) 40 srs./ac. (d) and (e) N.A. (v) Nil. (vi) NP—52 (late). (vii) Irrigated. (viii) Weeding and hoeing. (ix) 36.34″. (x) 15.3.1955.

2. TREATMENTS

5 manurial treatments : M_0=Control (no manure), M_1=40 lb./ac. of N as A/S, $M_2=M_1+40$ lb./ac. of P_2O_5 as Super, $M_3=M_1+40$ lb./ac. of K_2O as Mur. Pot. and $M_4=M_3+40$ lb./ac. of P_2O_5 as Super.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) and (b) 40′×27′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) to (c) No. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1646 lb./ac. (ii) 244.9 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	1664	1636	1762	1618	1548

S.E./mean = 122.5 lb./ac.

Crop :- Wheat. **Ref :- Bh. 55(6).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'M'.**

Object :—To test the effect of P_2O_5 applied to G.M. crops on the succeeding Wheat crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai*. (c) As per treatments. (ii) (a) Clayey loam. (b) Refer soil analysis, Kanke. (iii) 11.11.1955. (iv) (a) Ploughing by *desi* plough. (b) Behind the plough. (c) 40 srs./ac. (d) Row to row 1′. (e) —. (v) Nil. (vi) NP—52 (late). (vii) Irrigated. (viii) Hoeing. (ix) 4.04″. (x) 6.4.1956.

2. TREATMENTS :

7 manurial treatments: M_0=Control (no manure), M_1=G.M. with *sanai*, $M_2=M_1+40$ lb./ac. of P_2O_5 as Super at sowing of *sanai*, $M_3=M_1+40$ lb./ac. 0f P_2O_5 as Super at turning in of *sanai*, $M_4=M_1+40$ lb./ac. of P_2O_5 as Super at sowing of wheat, $M_5=M_1+20$ lb./ac. of P_2O_5 at sowing of *sanai*+20 lb./ac. of P_2O_5 at turning in of *sanai* and M_6=40 lb./ac. each of N as A/S and P_2O_5 as Super at sowing of Wheat.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) 42′×26′. (b) 40′×24′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Average. (ii) Nil. (iii) Grain and straw yield. (iv) (a) to (c) No. (v) (a) Sabour, Pusa, Patna, Sepaya and Nawadah. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1288 lb./ac. (ii) 215.4 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6
Av. yield	1291	1222	1113	1324	1323	1248	1493

S.E./mean = 107.7 lb./ac.

Crop :- Wheat. **Ref :- Bh. 55(11).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'M'.**

Object :—To study the effect of burying G.M. crops in Wheat fields.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 100 mds./ac. of F.Y.M.+1¼ mds./ac. of A/S +1¼ mds./ac. of Super. (ii) (a) Clayey loam. (b) Refer soil analysis, Kanke. (iii) 11.11.1955. (iv) (a) Ploughing by *desi* plough. (b) Behind. the plough. (c) 40 srs./ac. (d) Line to line 1′. (e) —. (v) Nil. (vi) NP—52 (late). (vii) Irrigated. (viii) Hoeing. (ix) 4.04″. (x) 6.4.1956.

2. TREATMENTS :

T_1=Control.
T_2=*Sanai* sown in 1st week of July and burying in mid August.
T_3=*Sanai* sown in 1st week of July and spreading in mid August and turned in 1st week of September.
T_4=*Sanai* sown in 1st week of July and spreading in mid August and turned in last week of September.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 68′×16′. (b) 66′×14′. (v) 1′×1′. (vi) Yes.

4. GENERAL

(i) Average. (ii) No. (iii) Grain and straw yield. (iv) (a) 1955—1956. (b) No. (c) Nil. (v) (a) Sabour, Pusa, Patna and Sepaya. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 977 lb./ac. (b) 192.3 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_1	T_2	T_3	T_4
Av. yield	958	988	1042	922

S.E./mean = 78.5 lb./ac.

Crop :- Wheat ***(Rabi.)*** **Ref :- Bh. 56(86).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'M'.**

Object :—To study the effect of burying G.M. crops in Wheat fields.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) 20 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy. (b) Refer soil analysis, Kanke. (iii) 29.10 1956. (iv) (a) One ploughing for burying G.M. 2 ploughings for sowing wheat. (b) Broadcasting. (c) 40 srs./ac. (d) and (e) —. (v) Nil. (vi) Irrigated. (vii) NP—798. (viii) Weeding. (ix) 4.98″. (x) 1.3.1957.

2. TREATMENTS :

Same as in expt. no. 55(11) above.

3. DESIGN :

(i) R.B.D. (ii) 4. (b) N.A. (iii) 5. (iv) (a) 65′×16′. (b) 64′×15′. (v) 6″×6″. (vi) Yes.

4. GENERAL :

(i) Average. (ii) Attack of yellow rust—no control measures taken. (iii) Grain and straw yield. (iv) (a) 1955—1956. (b) No. (c) Nil. (v) (a) Nil. (b)—. (vi) and (vii) Nil.

5. RESULTS .

(i) 585 lb./ac. (ii) 118.9 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_1	T_2	T_3	T_4
Av. yield	568	609	646	516

S.E./mean = 53.2 lb./ac.

Crop :- Wheat. **Ref :- Bh. 56(87).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'M'.**

Object :—To use of kharif crops for G.M. on Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) G.M. crops. (c) 20 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy loam. (b) Refer soil analysis, Kanke. (iii) 11.11.1956. (iv) (a) 4 ploughings for sowing wheat after burying green manure. (b) Broadcasting. (c) 40 srs./ac. (d) and (e) —. (v) Nil. (vi) BR—319. (vii) Irrigated. (viii) Hoeing and weedings. (ix) N.A. (x) 25.3.1957.

2. TREATMENTS :

6 manurial treatments : M_0=Control (no manure), M_1=G.M. with *sanai*, M_2=G.M. with *kalai*, M_3=G.M. with *moong*, M_4=G.M. with *guar* and M_5=G.M. with *dhaincha*.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 60′×18′. (b) 59′×17′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) and (b) No. (c) Nil. (v) (a) Sabour. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 972 lb./ac. (ii) 154.4 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	823	1027	935	1086	1030	929

S.E./mean = 77.2 lb./ac.

Crop :- Wheat. **Ref :- Bh. 55(102).**

Site :- Distt. Agri. Farm, Lehriasarai. **Type :- 'M'.**

Object :—To find the best method of application of fertilizers to Wheat crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Maize. (c) 100 md./ac. of T.C.+1½ md./ac. of A/S+1½ md./ac. of Super. (ii) (a) Loam. (b) N.A. (iii) 15.11.1955. (iv) (a) 5 ploughings by Bihar senior plough and 2 by *desi* plough. (b) Behind the plough. (c) 80 lb./ac. (d) Line to line 10″. (e) —. (v) Nil. (vi) NP—52 (late). (vii) Unirrigated. (viii) Weeding. (ix) 1.17″. (x) 11.4.1956.

2. TREATMENTS :

3 methods of applying fertilizers : M_1=Broadcasting, M_2=With the seed and M_3=Below the seed.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) and (b) 33′×33′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Attack of black rust and yellow rust—no control measures taken. (iii) Grain and straw yield. (iv) (a) to (c) No. (v) (a) All Govt. farms. (b) Nil. (vi) There was scanty rainfall during the crop season. (vii) Nil.

5. RESULTS :

(i) 1086 lb./ac. (ii) 178.6 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3
Av. yield	1104	1056	1097

S.E./mean = 72.9 lb./ac.

Crop :- Wheat. **Ref :- Bh. 54(1).**

Site :- Distt. Agri. Farm, Lehriasarai. **Type :- 'M'.**

Object :—To see the effect of potash on the yield of Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Maize. (c) 100 lb./ac. of A/S+100 lb./ac. of Super. (ii) (a) Loam. (b) N.A. (iii) 5.11.1954. (iv) (a) 7 to 8 ploughings. (b) Behind the plough. (c) 80 lb./ac. (d) Line to line 10″. (e)—. (v) Nil. (vi) NP—52 (late). (vii) Unirrigated. (viii) Weeding. (ix) 1.06″. (x) 31.3.1955.

2. TREATMENTS :

5 manurial treatments : M_0=Control (no manure), M_1=40 lb./ac. of N as A/S, $M_2=M_1+40$ lb./ac. of P_2O_5 as Super, $M_3=M_1+40$ lb./ac. of K_2O as Mur. Pot. and $M_4=M_3+40$ lb./ac. of P_2O_5 as Super.

Manures applied at sowing.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 35′×35′. (b) 33′×33′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Attack of yellow rust—no control measures taken. (iii) Grain and straw yield, no. of tillers. (iv) (a) to (c) No. (v) (a) All Govt. farms. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1432 lb./ac. (ii) 175.8 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	980	1370	1580	1570	1660

S.E./mean = 87.9 lb./ac.

Crop :- Wheat. **Ref :- Bh. 54(33).**

Site :- Distt. Agri. Farm, Monghyr. **Type :- 'M'.**

Object :—To test the effect of potash on the yield of Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) Nil. (ii) (a) Loamy soil. (b) N.A. (iii) 14.11.1954. (iv) (a) 2 disc ploughings by tractor at an interval of 6 days. (b) N.A. (c) 7 to 10 srs./ac. (d) 10″×10″. (e) 2 to 3. (v) Nil. (vi) NP—52 (late). (vii) Unirrigated. (viii) Weeding and hoeing. (ix) 0.97″. (x) 27.3.1955.

2. TREATMENTS :

Same as in expt. no. 54(1) on page 239.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) and (b) 33′×33′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Germination was not uniform. (ii) Nil. (iii) Grain and straw yield. (iv) (a) to (c) No. (v) (a) Banka and Kanke. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 415 lb./ac. (ii) 120.6 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	522	454	390	336	372

S.E./mean = 60.3 lb./ac.

Crop :- Wheat. **Ref :- Bh. 55(107).**
Site :- Govt. Agri. Farm, Musheri. **Type :- 'M'.**

Object :—To find out the best method and time of burying G.M. crops in Wheat fields.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 4.11.1955. (iv) (a) 2 tractor ploughings, then one Bihar ploughing, followed by *desi* ploughing. (b) Behind the plough. (c) 40 srs./ac. (d) Row to row 10″. (e) —. (v) Nil. (vi) NP—758 (late). (vii) Irrigated. (viii) Weeding. (ix) 1.01″. (x) 5.4.1956.

2. TREATMENTS :

Same as in expt. no. 55(11) on page 237.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) 72′×15′. (b) 70½′×13½′. (v) 9″×9″. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Yield of grain. (iv) (a) 1955—1957. (b) and (c) No. (v) (a) All Govt. Farms. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1230 lb./ac. (ii) 168.6 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_1	T_2	T_3	T_4
Av. yield	1271	1153	1400	1094

S.E./mean = 84.3 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 57(19).**
Site :- Govt. Agri. Farm, Musheri. **Type :- 'M'.**

Object :—To find out the best method and time of burying G.M. crops in Wheat fields.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) Nil. (ii) (a) Sandy lome. (b) N.A. (iii) 16.11.1957. (iv) (a) 3 ploughings. (b) Line sowing. (c) 40 srs./ac. (d) N.A. (e) —. (v) Nil. (vi) NP—758 (medium). (vii) Irrigated. (viii) Furrowing and earthing. (ix) 2.2″. (x) 8.4.1958.

2. TREATMENTS:

Same as in expt. no. 55(11) on page 237.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) 168′×174′. (iii) 6. (iv) (a) 28′×41′. (b) 27′×40′. (v) 6″×6″. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Nil. (iii) Grain yield. (iv) (a) 1955—1957. (b) No. (c) Nil. (v) (a) Chianki. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 270 lb./ac. (ii) 154.0 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_1	T_2	T_3	T_4
Av. yield	134	288	343	315

S.E./mean = 62.9 lb./ac.

Crop :- Wheat. **Ref :- Bh. 55(110).**

Site :- Govt. Agri. Farm, Musheri. **Type :- 'M'.**

Object :—To find the best method of applying fertilizers to Wheat crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Potato. (c) 15 mds./ac. of castor cake+200 to 300 mds./ac. of cowdung. (ii) (a) Sandy loam. (b) N.A. (iii) 9.11.1955. (iv) (a) Two tractor ploughings and one ploughing with Bihar plough followed by one with *desi* plough and cultivator. (b) Behind the plough. (c) 40 srs./ac. (d) Row to row 10″. (e)—. (v) Nil. (vi) NP—758 (late). (vii) Irrigated. (viii) Weeding. (ix) 1.01″. (x) 8.4.1956.

2. TREATMENTS :

Same as in expt. no. 55(102) on page 238.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) 42′×29′. (b) 40′×27′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Very good. (ii) Nil. (iii) Yield of grain. (iv) (a) 1955—1957. (b) and (c) N.A. (v) (a) All Govt. Farms. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2291 lb./ac. (ii)271.9lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3
Av. yield	2268	2406	2198

S.E./mean = 111.0 lb./ac.

Crop :- Wheat. **Ref :- Bh. 56(41).**

Site :- Govt. Agri. Farm, Musheri. **Type :- 'M'.**

Object :—To find out the best method of applying fertilizers to Wheat crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Maize. (c) 4 tons/ac. of T.C.+1¼ mds./ac. of A/S+1¼ mds./ac. of Super. (ii) (a) Sandy loam. (b) N.A. (iii) 25.11.1956. (iv) (a) Ploughing with tractor and Bihar plough. (b) Behind the plough. (c) 80 lb./ac. (d) Row to row 10″. (e) —. (v) Nil. (vi) N.P—799. (vii) Unirrigated. (viii) Hoeing. (ix) 3.58″. (x) 4.4.1957.

2. TREATMENTS :

3 methods of applying 40 lb./ac. of N+40 lb./ac. of P_2O_5 : M_1=By broadcasting, M_2=With the seed and M_3=Below the seed.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 8. (iv) (a) N.A. (b) 18′×30′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Grain yield. (iv) (a) 1955—1957. (b) and (c) N.A. (v) (a) All Govt. Farms. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1970 lb./ac. (ii) 323.6 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3
Av. yield	2094	1888	1928

S.E./mean = 114.4 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 57(22).**

Site :- Govt. Agri. Farm, Musheri. **Type :- 'M'.**

Object :—To find the best method of applying fertilizer to Wheat crop.

1. BASAL CONDITIONS :

(i) (a) Nil (b) Maize. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 23.11.1957. (iv) (a) 3 ploughings. (b) Behind the plough. (c) 80 lb./ac. (d) Rows 1′ apart. (e) —. (v) Nil. (vi) NP—799 (medium). (vii) Irrigated. (viii) Hoeing and weeding. (ix) 1.14″. (x) 25.3.1958.

2. TREATMENTS :

Same as in expt. no. 55(102) on page 238.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) 256′×60′. (iii) 8. (iv) (a) 32′×20′. (b) 30′×18′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) 1955—1957. (b) No. (c) Nil. (v) (a) Banka, Bikramganj and Kanke. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 927 lb./ac. (ii) 230.0 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3
Av. yield	922	989	870

S.E./mean = 81.3 lb./ac.

Crop :- Wheat. **Ref :- Bh. 56(46).**

Site :- Govt. Agri. Farm, Musheri. **Type :- 'M'.**

Object :—To find the best method of burying sannhemp as G.M. for Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Sannhemp. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 25.11.1956. (iv) (a) Ploughing with tractor and Bihar plough. (b) Behind the plough. (c) 40 srs./ac. (d) Row to row 10″ (e) —. (v) Nil. (vi) NP—755. (vii) Unirrigated. (viii) Hoeing and weeding. (ix) 3.85″. (x) 5, 6.4.1957

2. TREATMENTS :

6 manurial treatments : M_0=Control (no manure), M_1=Sannhemp grown and buried in at bud stage, M_2= Sannhemp grawn and harvested at bud stage at 6″ from the ground, M_3=Sannhemp grown and harvested at 3″ from the ground, M_4=Sannhemp from M_2 plots incorporated and M_5=Sannhemp from M_3 plots incorporated.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) 174′×168′ (iii) 4. (iv) (a) 29′×42′. (b) 27′×40′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Attack of yellow rust. (iii) Nil. (iv) (a) 1956—1957. (b) Yes. (c) N.A. (v) (a) All Govt. Farms. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 881 lb./ac. (ii) 112.7 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	782	967	761	987	946	843

S.E./mean = 56.4 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 57(17).**

Site :- Govt. Agri. Farm, Musheri. Type :- 'M'.

Object :—To find out the best method of burying G.M. crops in Wheat fields.

1. BASAL CONDITIONS :

(a) Nil. (b) Sannhemp. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 10.11.1957. (iv) (a) 3 ploughings, (b) Behind the plough. (c) 30 srs./ac. (d) N.A. (e) —. (v) Nil. (vi) NP—755 (medium) (vii) Irrigated. (viii) Earthing. (ix) 1.7″. (x) 20.3.1958.

2. TREATMENTS and DESIGN :

Same as in expt. no. 56(46) on page 242.

4. GENERAL :

(i) N.A. (ii) Attack of rust—no control measures taken. (iii) Grain yield. (iv) (a) 1956—1957. (b) and (c) N.A. (v) (a) Pusa. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 869 lb./ac. (ii) 193.2 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	1049	1059	741	797	787	782

S.E./mean = 96.6 lb./ac.

Crop :- Wheat. Ref :- Bh. 55(106).

Site :- Govt. Agri. Farm, Musheri. Type :- 'M'.

Object :—To find the manurial value of different G.M. crops preceding Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) As per treatments. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 3.11.1955. (iv) (a) Burying by victory plough, 2 tractor ploughings, Bihar plough and *desi* plough. (b) Behind the plough. (c) 40 srs./ac. (d) Row to row 1′. (e) —. (v) Nil. (iv) NP—758 (late). (vii) Irrigated. (viii) Weeding. (ix) 1.01″. (x) 5.4. 1956.

2. TREATMENTS :

6 G.M. crops preceding wheat : M_0=Control (no G.M.), M_1 =*Sanai*, M_2=*Kalai*, M_3=*Moong*, M_4=*Guar* and M_5=*Dhaincha*.

G.M. crops buried in *situ*.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 72′×15′. (b) 70½′×13½′. (v) 9″×9″. (vi) Yes.

4. GENERAL:

(i) Fair. (ii) Nil. (iii) Grain yield. (iv) (a) 1955—1957. (b) and (c) No. (v) (a) All Govt. Farms. (b) N.A. (vi) and (vii) Nil.

5. RESULTS:

(i) 1312 lb./ac. (ii) 191.6 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	1342	1318	1271	1365	1389	1189

S.E./mean = 95.8 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 57(15).**

Site :- Govt. Agri. Farm, Musheri. **Type :- 'M'.**

Object :—To study the manurial value of different G.M. crops preceding Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) As per treatments. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 13.11.1957. (iv) (a) 3 ploughings. (b) Broadcast. (c) 40 srs./ac. (d) N.A. (e) —. (v) 5 md./ac. of F.Y.M. (vi) NP—758 (medium). (vii) Irrigated. (viii) Earthing. (ix) 2.0″. (x) 7.4.1958.

2. TREATMENTS :

5 G.M. crops preceding wheat : M_0=Control (no G.M.), M_1 =*Sanai*, M_2=*Kalai*, M_3=*Moong* and M_4=*Dhaincha*.

G.M. crops buried in *situ*.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) 168′×146′. (iii) 4. (iv) (a) 42′×29′. (b) 40′×27′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Attack of rust—no control measures taken. (iii) Grain yield. (iv) (a) 1955—1957. (b) No. (c) Nil. (v) (a) Pusa. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 372 lb./ac. (ii) 102.1 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	319	411	370	411	350

S.E./mean = 51.1 lb./ac.

Crop :- Wheat. **Ref :- Bh. 55(109).**

Site :- Govt. Agri. Farm, Musheri. **Type :- 'M'.**

Object :—To test the effect of deep placement of fertilizer for Wheat.

1. BASAL CONDITIONS :

(i) Nil. (b) Potato. (c) 15 md./ac. of castor cake+200 to 300 md./ac. of cowdung. (ii) (a) Sandy loam. (b) N.A. (iii) 7.11.1955. (iv) (a) 2 tractor ploughings, 3 Bihar ploughings followed by *desi* ploughings and cultivators. (b) Behind the plough. (c) 40 srs./ac. (d) Row to row 10″. (e) —. (v) Nil. (vi) NP—758. (vii) Irrigated. (viii) Weeding. (ix) 1.01″. (x) 6.4.1956.

2. TREATMENTS :

6 manurial treatments : M_0=Control (no manure), M_1=40 lb./ac. of N as A/S applied at surface, M_2=40 lb./ac. of N as A/S applied deep, M_3=N as in M_1+40 lb./ac. of P_2O_5 as Super applied at surface, M_4=N as in M_2+40 lb./ac. of P_2O_5 as Super applied deep and M_5=40 lb./ac. of N as A/S applied at surface+40 lb./ac. of P_2O_5 Super applied deep.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 5. (iv) (a) 42′×29′. (b) 40′×27′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Very good. (ii) Nil. (iii) Tiller, height, yield of grain and straw. (iv) (a) to (c) No. (v) (a) All Govt. Farms. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2333 lb./ac. (ii) 164.1 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	1709	2265	2389	2551	2655	2431

S.E./mean = 73.4 lb./ac.

Crop :- Wheat. **Ref :- Bh. 55(111).**

Site :- Govt. Agri. Farm, Musheri. **Type :- 'M'.**

Object :—To test the effect of potash on Wheat crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Maize. (c) 5 tons/ac. of T.C.+3 md./ac. of Super+1¼ md./ac. of A/S. (ii) (a) Sandy loam. (b) N.A. (iii) 11.11.1955. (iv) 2 tractor ploughings, 3 Bihar ploughings followed by *desi* ploughings and cultivator. (b) Behind the plough. (c) 40 srs./ac. (d) Row to row 10″. (e) —. (v) Nil. (vi) NP—758 (late). (vii) Irrigated. (viii) Weeding. (ix) 1.01″. (x) 10.4.1956.

2. TREATMENTS :

5 manurial treatments : M_0=Control, M_1=40 lb./ac. of N as A/S, M_2=40 lb./ac. of P_2O_5 as Super, M_3=M_1+40 lb./ac. of P_2O_5 as Mur. Pot. and M_4=M_3+40 lb./ac. of P_2O_5 as Super.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 42′×29′. (b) 40′×27′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Very good. (ii) Nil. (iii) Height of plants, tiller count, grain and straw yield. (iv) (a) to (c) No. (v) (a) All Govt. Farms. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2099 lb./ac. (ii) 183.4 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	1991	2074	1950	2365	2116

S.E./mean = 91.7 lb./ac.

Crop :- Wheat. **Ref :- Bh. 55(145).**

Site :- Govt. Agri. Farm, Nawadah. **Type :- 'M'.**

Object :—To test the effect of potash on the yield of Wheat.

1. BASAL CONDITIONS

(i) (a) Nil. (b) *Marua+Rahar.* (c) N.A. (ii) (a) Loam. (b) N.A. (iii) 2.11.1955. (iv) (a) 5 to 6 *desi* ploughings. (b) Behind the plough. (c) 40 srs./ac. (d) Row to row 10″. (e) —. (v) Nil. (vi) NP—798 (medium). (vii) Irrigated. (viii) Nil. (ix) 1.62″. (x) 2.4.1956.

2. TREATMENTS :

Same as in expt. no. 55(111) on page 245.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 33′×33′. (b) 32′×31′8″. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Height, tillers, length of earhead, yield of straw and grain. (iv) (a) to (c) No. (v) (a) All Govt. Farms. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1373 lb./ac. (ii) 80.8 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	1033	1243	1547	1315	1724

S.E./mean = 40.4 lb./ac.

Crop :- Wheat. **Ref :- Bh. 55(137).**

Site :- Govt. Agri. Farm, Nawadah. **Type :- 'M'.**

Object :—To find out the best method and time of burying the G.M. crops in Wheat fields.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) Nil. (ii) (a) Loam. (b) N.A. (iii) 23.11.1955. (iv) (a) 5 or 6 *desi* ploughings. (b) Behind the plough. (c) 40 srs./ac. (d) Row to row 10″. (e) —. (v) Nil. (vi) NP—52 (late). (vii) Irrigated. (viii) Interculturing with zig-zag harrow and weeding. (ix) 1.67″. (x) 29, 30.3.1956.

2 TREATMENTS :

Same as in expt. no. 55(11) on page 237.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) 72′×15′. (b) 70′4″×13′4″. (v) 10″×10″. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Biometric observations and grain yield. (iv) (a) to (c) No. (v) (a) Chianki. (b) Nil. (vi) and (vii) Nil.

5. RESULTS

(i) 1225 lb./ac. (ii) 289.4 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_1	T_2	T_3	T_4
Av. yield	1228	1257	1160	1253

S.E./mean = 129.4 lb./ac.

Crop :- Wheat. **Ref :- Bh. 55(140).**

Site :- Govt. Agri. Farm, Nawadah. **Type :- 'M'.**

Object :—To test the effect of phosphate applied to G.M. crops on soil fertility and yield of Wheat.

1. BASAL CONDITIONS:

(i) (a) Nil. (b) *Sanai*. (c) As per treatments. (ii) (a) Loam. (b) N.A. (iii) 18.11.1955. (iv) (a) 5 or 6 *desi* ploughings. (b) Behind the plough. (c) 40 srs./ac. (d) Row to row 10". (e) —. (v) Nil. (vi) NP—52 (late). (vii) Irrigated. (viii) Interculturing with zig-zag harrow. (ix) 1.67" (x) 23.3.1956.

2. TREATMENTS :

Same as in expt. no. 55(6) on page 236.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 5. (iv) (a) 38'×29'. (b) 37'×27' 8". (v) N.A. (vi) Yes.

4, GENERAL :

(i) Average. (ii) Nil. (iii) Biometric observations and yield of grain. (iv) (a) to (c) No. (v) (a) Kanke. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1057 lb./ac. (ii) 124.3 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6
Av. yield	910	908	1011	1011	1050	1042	1466

S.E./mean = 55.6 lb./ac.

Crop :- Wheat. **Ref :- Bh. 55(138).**

Site :- Govt. Agri. Farm, Nawadah. **Type :- 'M'.**

Object :—To find out the effect of G.M. crops on Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) G.M. crops. (c) Nil. (ii) (a) Loam. (b) N.A. (iii) 30.11.1955. (iv) (a) 5 or 6 *desi* ploughings. (b) Behind the plough. (c) 40 srs./ac. (d) Row to row 10". (e) —. (v) Nil. (vi) NP—52 (late). (vii) Irrigated. (viii) Interculturing with zig-zag harrow. (ix) 1.67". (x) 1.4.1956.

2. TREATMENTS :

Same as in expt. no. 55(106) on page 243.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) 54'×120'. (iii) 4. (iv) (a) 54'×20'. (b) 53'×19'. (v) 6"×6". (vi) Yes.

4. GENERAL :

(i) Moderate. (ii) Nil. (iii) Biometric observations and grain yield. (iv) (a) 1955—1957. (b) and (c) No. (v) (a) Purnea, Sepaya and Dumka. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1058 lb./ac. (ii) 117.2 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	1043	1081	1075	965	1056	1127

S.E./mean = 58.6 lb./ac.

Crop :- Wheat *(Rabi).* **Ref :- Bh. 56(158).**

Site :- Govt. Agri. Farm, Nawadah. **Type :- 'M'.**

Object :—To find out the effect of G.M. crops on Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) G.M. (c) Nil. (ii) (a) Loam. (b) N.A. (iii) 20.11.1956/N.A. (iv) (a) 3 ploughings by country plough. (b) Behind the plough. (c) 80 lb./ac. (d) Rows 10" apart. (e) —. (v) Nil. (vi) NP—52 (late). (vii) Irrigated. (viii) Weeding and hoeing. (ix) 2.21". (x) 29.3.1957.

2. TREATMENTS :

Same as in expt. no. 55(106) on page 243.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 54'×20'. (b) 53'×19'. (v) 6"×6". (vi) Yes.

4. GENERAL :

(i) Poor. (ii) Black rust—no control measures taken. (iii) Grain and straw yield. (iv) (a) 1955—1957. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 386 lb./ac. (ii) 55.7 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	364	400	368	399	341	443

S.E./mean = 27.9 lb./ac.

Crop :- Wheat *(Rabi).* **Ref :- Bh. 57(188).**

Site :- Govt. Agri. Farm, Nawadah. **Type :- 'M'.**

Object :—To find out the effect of G.M. crops on Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) G.M. (c) Nil. (ii) (a) Loam. (b) N.A. (iii) 7.11.57/N.A. (iv) (a) 4 ploughings. (b) Behind the plough. (c) 80 lb./ac. (d) Row to row 10". (e)—. (v) Nil. (vi) NP—52. (vii) Irrigated. (viii) Nil. (ix) 0.54" (x) 24.3.58.

2. TREATMENTS :

Same as in expt. no. 55(106) on page 243.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 33'×33'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Mild attack of yellow rust. (iii) Grain and straw yield. (iv) (a) 1955—1957. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 700 lb./ac. (ii) 106.8 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	600	710	760	660	720	750

S.E./mean = 53.4 lb./ac.

Crop :- Wheat. **Ref :- Bh. 55(142).**

Site :- Govt. Agri. Farm, Nawadah. **Type :- 'M'.**

Object :—To test the effect of deep placement of fertilizers on Wheat crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) G.M. crop. (c) Nil. (ii) (a) Loam. (b) N.A. (iii) 24.11.1955/—. (iv) (a) 5 or 6 *desi* ploughings. (b) Behind the plough. (c) 40 srs./ac. (d) Row to row 10". (e)—. (v) Nil. (vii) NP—52 (late). (vii) Irrigated. (viii) Interculturing. (ix) 1.67". (x) 30.3.1956.

2. TREATMENTS :

Same as in expt. no. 55(109) on page 244.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) 60'×108'. (iii) 4. (iv) (a) 60'×18'. (b) N.A. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Biometric observations and grain yield. (iv) (a) 1955—1959. (b) No. (c) Nil. (v) (a) Musheri. (b) N.A. (vi) and (vii) Nil.

5. RESULTS

(i) 1084 lb./ac. (ii) 145.4 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	868	896	796	1117	1449	1377

S.E./mean 72.7 lb./ac.

Crop :- Wheat ***(Rabi).*** **Ref :- Bh. 56(155).**

Site :- Govt. Agri. Farm, Nawadah. **Type :- 'M'.**

Object :—To test the effect of deep placement of fertilizers on Wheat crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Wheat. (c) As per treatments. (ii) (a) Loam. (b) N.A. (iii) 22.12.1956/—. (iv) (a) 4 ploughings by *desi* plough. (b) Behind the plough. (c) 80 lb./ac. (d) Rows 10" apart. (e) —. (v) Nil. (vi) NP—52 (late). (vii) Irrigated. (viii) N.A. (ix) 2.21". (x) 10.4.1957.

2. TREATMENTS :

4 manurial treatments : M_0=Control (no manure), M_1=40 lb./ac. of N as A/S at surface, M_2=M_1+40 lb./ac. of P_2O_5 as Super at surface and M_3=40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super applied at plough depth.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) 43'×27'. (b) 43'×25'. (v) 1' along length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1955—1959. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 476 lb./ac. (ii) 107.0 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3
Av. yield	229	398	571	706

S.E./mean = 47.8 lb./ac.

Crop :- Wheat ***(Rabi).*** **Ref :- Bh. 57(162).**

Site :- Govt. Agri. Farm, Nawadah. **Type :- 'M'.**

Object :—To test the effect of deep placement of fertilizers on Wheat crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Marua.* (c) 20 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super. (ii) (a) Loamy. (b) N.A. (iii) 21.11.1957/—. (iv) (a) 4 ploughings. (b) Behind the plough. (c) 80 lb./ac. (d) Rows 1′ apart. (e) —. (v) Nil. (vi) NP—52. (vii) Irrigated. (viii) Nil. (ix) 0.54″. (x) 22.3.1958.

2. TREATMENTS :

Same as in expt. no. 56(155) on page 249.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) 59′×18′. (b) 59′×17′. (v) 6″ along the length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) 1955—1959. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 820 lb./ac. (ii) 138.5 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3
Av. yield	456	912	912	999

S.E./mean = 61.9 lb./ac.

Crop :- Wheat ***(Rabi).*** **Ref :- Bh. 58(180).**

Site :- Govt. Agri. Farm, Nawadah. **Type :- 'M'.**

Object :—To test the effect of deep placement of fertilizers on Wheat crop.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) (a) Loam. (b) N.A. (iii) 15.11.1958/N.A. (iv) 4 ploughings. (b) Behind the plough. (c) 80 lb./ac. (d) Row to row 1′. (e) N.A. (v) Nil. (vi) NP—52. (vii) Irrigated. (viii) N.A. (ix) 0.03″. (x) 30.3.1959.

2. TREATMENTS :

Same as in expt. no. 56(155) on page 249.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) N.A. (b) 36′×30′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Rust attack—dusting of 20 lb./ac. of Sulphur. (iii) Grain and straw yield. (iv) (a) 1955—1959. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS

(i) 1180 lb./ac. (b) 114.6 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3
Av. yield	709	1261	1271	1477

S.E./mean = 51.2 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 59(113).**

Site :- Govt. Agri. Farm, Nawadah. **Type :- 'M'.**

Object :—To test the effect of deep placement of fertilizers on Wheat crop.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Loam. (b) N.A. (iii) 18.11.1959. (iv) (a) 4 ploughings. (b) Behind the plough. (c) 80 lb./ac. (d) Row to row 1′. (e) —. (v) Nil. (vi) NP—52. (vii) Irrigated. (viii) N.A. (ix) 1.16″. (x) 25.3.1960.

2. TREATMENTS :

Same as in expt. no. 56(155) on page 249.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) N.A. (b) 36′×30′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) 1955—1959. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1597 lb./ac. (ii) 96.9 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3
Av. yield	660	1892	1908	1929

S.E./mean = 43.2 lb./ac.

Crop :- Wheat. **Ref :- Bh. 55(143).**

Site :- Govt. Agri. Farm, Nawadah. **Type :- 'M'.**

Object :—To find out the best method of applying fertilizers to Wheat crop.

1. BASAL CONDITIONS :

(i) Nil. (b) *Marua* and *Rahar*. (c) Nil. (ii) (a) Loam. (b) N.A. (iii) 1.11.1955/—. (iv) (a) 5 to 6 *desi* ploughings. (b) Behind the plough. (c) 40 srs./ac. (d) Row to row 10″. (e)—. (v) Nil. (vi) N.P.—710 (late). (vii) Irrigated. (viii) Interculturing with zig-zag harrow on 17.1.1956. (ix) 1.62″. (x) 3.4.1956.

2. TREATMENTS :

3 methods of applying 40 lb./ac. of N+40 lb./ac. of P_2O_5 : M_1=By broadcasting, M_2=With the seed and M_3=Below the seed

Manuring on 1.12.1955.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 5. (iv) (a) 33′×33′. (b) N.A. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Biometric observations and grain yield. (iv) (a) 1955—1957. (b) and (c) No. (v) (a) Chianki, Sepaya, Purnea, Darbhanga and Bikramganj. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1502 lb./ac. (ii) 112.0 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3
Av. yield	1436	1515	1554

S.E./mean = 50.1 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 56(156).**

Site :- Govt. Agri. Farm, Nawadah. **Type :- 'M'.**

Object :—To find out the best method of applying fertilizer to Wheat crop.

1. BASAL CONDITIONS

(i) (a) Nil. (b) Wheat. (c) 25 lb./ac. of N as A/S+25 lb./ac. of P_2O_5 as Super. (ii) (a) Loamy. (b) N.A. (iii) 20.12.1956/—. (iv) (a) 4 ploughings by *desi* plough. (b) Behind the plough. (c) 80 lb./ac. (d) Rows 10" apart. (e) —. (v) Nil. (vi) NP—52 (late). (vii) Irrigated. (viii) Weeding and hoeing. (ix) 2.21". (x) 8.4.1957.

2. TREATMENTS :

Same as in expt. no. 55(143) on page 251.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 7. (iv) (a) 37'×34'. (b) N.A. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (.v) (a) 1955—1957. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 717 lb./ac. (ii) 49.5 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3
Av. yield	691	704	757

S.E./mean = 18.7 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 57(199).**

Site :- Govt. Agri. Farm, Nawadah. **Type :- 'M'.**

Object :—To find out the best method of applying fertilizer to Wheat crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Loam. (b) N.A. (iii) 8.11.1957/—. (iv) (a) 4 ploughings by *desi* plough. (b) Behind the plough in line. (c) 40 srs./ac. (d) Rows 10" apart. (e) —. (v) Nil. (vi) NP—52. (vii) Irrigated. (viii) Weeding and hoeing. (ix) 4.24". (x) 10.3.1958.

2. TREATMENTS :

Same as in expt. no. 55(143) on page 251.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 8. (iv) (a) and (b) 21½'×50'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of grain. (iv) (a) 1955—1957. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1246 lb./ac. (ii) 82.5 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3
Av. yield	1132	1263	1342

S.E./mean = 29.2 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 56(61).**

Site :- Agri. Res. Instt., Patna. **Type :- 'M'.**

Object :—To test the effect of T. C. on soil fertility and yield of Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) No. (ii) (a) Heavy clay. (b) Refer soil analysis, Patna. (iii) 28.11.1956. (iv) (a) 5 ploughings. (b) *Tarah* sowing. (c) 25 srs./ac. (d) Row to row 10". (v) N.A. (e) —. (vi) NP—52. (vii) Unirrigated. (viii) Nil. (ix) 4.29". (x) 26.3.1957.

2. TREATMENTS :

6 manurial treatments : M_0=Control (no manure), M_1=M+10 lb./ac. of N as T.C.+30 lb./ac. of N as A/S, M_2=M+20 lb./ac. of N as T.C.+20 lb./ac. of N as A/S, M_3=M+30 lb./ac. of N as T.C.+10 lb./ac. of N as A/S, M_4=M+40 lb./ac. of N as T.C. and M_5= M+40 lb./ac. of N as A/S.

where M=40 lb./ac. of P_2O_5 as Super.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 5. (iv) (a) 42' ×4"×28'6". (b) 40'4"×27'. (v) 12"×9". (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Slightly affected by black rust—no control measures were taken. (iii) Grain and straw yield. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1000 lb./ac. (ii) 125.2 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	708	1074	1131	983	806	1296

S.E./mean = 56.0 lb./ac.

Crop :- Wheat. *(Rabi)*. **Ref :- Bh. 57(38).**

Site :- Agri. Res. Instt., Patna. **Type :- 'M'.**

Object :—To test the effect of T. C. on soil fertility and yield of Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Heavy clay. (b) Refer soil analysis, Patna. (iii) 9.11.1957. (iv) (a) 5 ploughings. (b) *Tarah* sowing. (c) 30 srs./ac. (d) 9"×6". (e) —. (v) Nil. (vi) NP—52. (vii) Irrigated. (viii) Weeding. (ix) 1.16". (x) 28.3.1958 to 5.4.1958.

2. TREATMENTS :

Same as in expt. no. 56(61) above.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 5. (iv) (a) N.A. (b) 52'×21'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 424 lb./ac. (ii) 224.6 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	380	411	400	441	453	461

S.E./mean = 100.4 lb./ac.

Crop :- Wheat ***(Rabi).*** **Ref :- Bh. 58(144).**

Site :- Agri. Res. Instt., Patna. **Type :- 'M'.**

Object :—To test the effect of T.C. on Wheat yield and soil fertility.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Heavy clay. (b) Refer soil analysis, Patna. (iii) 25 to 27.11.1959. (iv) (a) 5 ploughings. (b) Behind the plough. (c) 30 srs./ac. (d) Rows 1′ apart. (e) —. (v) Nil. (vi) NP—799. (vii) Irrigated. (viii) Weeding and earthing. (ix) 2.95″. (x) 2 to 4.4.1959.

2. TREATMENTS ;

Same as in expt. no. 56(61) on page 253.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 5. (iv) (a) 55′×22′. (b) 53′3″×20′6″. (v) 10″×9″. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1456 lb./ac. (ii) 119.3 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	1018	1707	1484	1523	1216	1787

S.E./mean = 53.4 lb./ac.

Crop :- Wheat ***(Rabi).*** **Ref :- Bh. 59(96).**

Site : Agri. Res. Instt., Patna. **Type :- 'M'.**

Object :—To test the effect of trace elements on Wheat yield.

1. BASAL CONDITIONS :

(i) Nil. (b) Paddy. (c) 222 lb./ac. of Super+56 lb./ac. of Urea+112 lb./ac. of A/S. (ii) (a) Heavy clay. (b) Refer soil analysis, Patna. (iii) 11.12.12.1959. (iv) (a) 2 ploughings by tractor. (b) N.A. (c) 30 srs./ac. (d) N.A. (e)—. (v) Nil. (vi) NP—799. (vii) Irrigated. (vii) N.A. (ix) 1.8″. (x) N.A.

2. TREATMENTS :

M_1=Control (no manure).
M_2=40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super+40 lb./ac. of K_2O as Mur. Pot.
M_3 = M_2+10 lb./ac. of Mn SO_4.
M_4=M_2+20 lb./ac. of Mn SO_4.
M_5=M_2+10 lb./ac. of $ZnSO_4$.
M_6=M_2+20 lb./ac. of $ZnSO_4$.
M_7=M_2+10 lb./ac. of Borax.
M_8=M_2+20 lb./ac. of Borax.
M_9 = M_2+10 lb./ac. of $CuSO_4$.
M_{10}=M_2+20 lb./ac. of $CuSO_4$.
M_{11}=M_2+10 lb./ac. of $FeSO_4$.
M_{12}=M_2+20 lb./ac. of $FeSO_4$.
M_{13}=M_2+ 1 lb./ac. of Sodium Molybdate.
M_{14}=M_2+ 2 lb./ac. of Sodium Molybdate.

3. DESIGN :

(i) R.B.D. (ii) (a) 14. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 40⅓′×13⅓′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Nil. (iii) Grain and straw yield. (iv) 1959—N.A. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 736 lb./ac. (ii) 147.1 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3	M_4	M_5	M_6	M_7
Av. yield	396	779	764	676	756	681	771

Treatment	M_8	M_9	M_{10}	M_{11}	M_{12}	M_{13}	M_{14}
Av. yield	766	800	784	710	843	877	707

S.E./mean = 73.6 lb./ac.

Crop :- Wheat. **Ref :- Bh. 55(122).**

Site :- Govt. Agri. Farm, Patna. **Type :- 'M'.**

Object :—To test the effects of potash on the yield of Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) G.M. (c) 20 lb./ac. of P_2O_5 as Super. (ii) (a) Clay. (b) Refer soil analysis, Patna. (iii) 8.11.1955. (iv) (a) Tractor ploughings (mould board and disc harrow). (b) "*Tara*" seed drill. (c) 40 srs./ac. (d) Row to row 1′. (e) —. (v) Nil. (vi) NP—758 (medium). (vii) Irrigated. (viii) Hoeing. (ix) 1.36″. (x) 5.4.1956.

2. TREATMENTS :

5 manurial treatments : M_0=Control, M_1=40 lb./ac. of N as A/S, $M_2=M_1$+40 lb./ac. of P_2O_5 as Super, $M_3=M_1$+40 lb./ac. of K_2O as Mur. Pot. and $M_4=M_3$+40 lb./ac. of P_2O_5 as Super.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) and (b) 60.5′×18′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Slight attack of brown rust. (iii) Grain and straw yield. (iv) (a) 1955—1959. (b) and (c) No. (v) (a) Banka and Kanke. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1773 lb./ac. (ii) 148.4 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	960	2121	1867	1950	1967

S.E./mean = 74.2 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 58(145).**

Site :- Agri. Res. Instt., Patna. **Type :- 'M'.**

Object :—To test the effect of potash on the yield of Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Heavy clay. (b) Refer soil analysis, Patna. (iii) 6.12.1958. (iv) (a) 4 ploughings. (b) Behind the plough. (c) 30 srs./ac. (d) Rows 1′ apart. (e) —. (v) Nil. (vi) NP—799. (vii) Irrigated. (viii) Weeding and earthing. (ix) 2.95″. (x) 5.4.1959.

2. TREATMENTS :

Same as in expt. no. 55(122) above.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 32′×29½′. (b) 30′×27½′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Straw and grain yield (iv) (a) 1955—1959. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1037 lb./ac. (ii) 104.3 lb./ac. (iii) Treatmet differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	642	1086	1079	1155	1225

S.E./mean = 52.2 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 59(84).**

Site :- Agri. Res. Instt., Patna. **Type :- 'M'.**

Object :—To test the effect of potash on the yield of Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 20 lb./ac. of Super+50 lb./ac. of Urea+112 lb./ac. of A/S. (ii) Heavy clay. (b) Refer soil analysis, Patna. (iii) 5.12.1959. (iv) (a) 2 ploughings : 1 by tractor. (b) N.A. (c) 30 srs./ac. (d) and (e) N.A. (v) N.A. (vi) NP—799. (vii) Irrigated. (viii) Weeding. (ix) 1.8". (x) 8.4.1960.

2. TREATMENTS :

Same as in expt. no. 55(122) on page 255.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 40⅓′×27′. (v) N.A. (v) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1958—1960. (b) No. (b) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 941 lb./ac. (ii) 125.0 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	694	1046	937	1043	986

S.E./mean = 62.5 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 56(94).**

Site :- Govt. Agri. Farm, Piprakothi. **Type :- 'M'.**

Object :—To find out the best method of applying fertilizers to Wheat crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Wheat. (c) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy loam. (b) N.A. (iii) 4.12.1956. (iv) (a) 2 ploughings by Bihar senior plough, once with the cultivator. (b) Broadcasting. (c) 40 srs./ac. (d) and (e) N.A. (v) Nil. (vi) NP—755. (vii) Unirrigated. (viii) Weeding. (ix) N.A. (x) 20.4.1957.

2. TREATMENTS :

Same as in expt. no. 55(143) on page 251.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) 60.5′×59′. (iii) 8. (iv) (a) 20′×62.5′. (b) 18′×60.5′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1956—1957. (b) No. (c) Nil. (v) (a) Banka. Bikramganj, Kanke and Sabour. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1316 lb./ac. (ii) 339.0 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3
Av. yield	1083	1448	1417

S.E./mean = 119.9 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 57(191).**

Site :- Govt. Agri. Farm, Piprakothi. **Type :- 'M'.**

Object —To find out the best method of applying fertilizers to Wheat crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 1.11.1957. (iv) (a) 3 ploughings by country plough. (b) Behind the plough. (c) 40 srs./ac. (d) Rows 10" apart. (e) N.A. (v) Nil. (vi) NP—755. (vii) Irrigated. (viii) Weeding. (ix) 2.65". (x) 12.4.1958.

2. TREATMENTS :

Same as in expt. no. 55(143) on page 251.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 8. (iv) (a) 35½'×35½'. (b) 33'×33'. (v) 1¼'×1¼'. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1957—N.A. (b) N.A. (c) Nil. (v) (a) Sabour and Sepaya. (b) Nil. (vi) and (vii) Nil.

RESULTS :

(i) 993 lb./ac. (ii) 162.1 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3
Av. yield	1021	981	978

S.E./mean = 57.3 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 59(43).**

Site :- Govt. Agri. Farm, Piprakothi. **Type :- 'M'.**

Object :—To study the effect of deep placement of fertilizers on Wheat yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) G.M. with *sanai*. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 20.11.1959. (iv) (a) Ploughing by disc plough, harrow, Bihar plough, cultivator and then beaming. (b) Behind the plough. (c) 40 srs./ac. (d) Row to row 9". (e) —. (v) G.M. with *sanai*. (vi) NP—755 (medium). (vii) Irrigated. (viii) Weeding and harrowing. (ix) N.A. (x) 1, 2.4.1960.

2. TREATMENTS :

M_0=Control.
M_1=40 lb./ac. of N as A/S.
M_2=40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super on the surface.
M_3=40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super at plough depth.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) 35′×35′. (b) 33′×33′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Slight attack of black rust. (iii) Tiller count, height measurement and grain yield. (iv) (a) 1959—N.A. (b) No. (c) Nil. (v) (a) Nawadah. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 867 lb./ac. (ii) 357.1 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3
Av. yield	689	809	914	1054

S.E./mean = 159.7 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 56(93).**

Site :- Govt. Agri. Farm, Piprakothi. **Type :- 'M'.**

Object :—To study the manurial value of different G.M. crops for succeeding Wheat crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) G.M. crop. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 29.11.1956. (iv) (a) Ploughing by tractor, disc plough and five tined cultivator. Each ploughing was followed by beaming. (b) Broadcasting. (c) 40 srs./ac. (d) and (e) N.A. (v) Nil. (vi) NP—755. (vii) Unirrigated. (viii) Interculturing and weeding. (ix) N.A. (x) 18.4.1957.

2. TREATMENTS :

Same as in expt. no. 55(106) on page 243.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) 60.5′×118′. (iii) 4. (iv) (a) 20′×62.5′. (b) 18′×60.5′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Slight attack of stem borer. The affected plants removed from the field. (iii) Grain and straw yield. (iv) (a) to (c) No. (v) (a) Kanke, Pusa and Sabour. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1054 lb./ac. (ii) 143.0 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	1005	1016	969	1049	1108	1175

S.E./mean = 71.5 lb./ac.

Crop :-Wheat *(Rabi)*. **Ref :- Bh. 56(89).**

Site :- Govt. Agri. Farm, Piprakothi. **Type :- 'M'.**

Object :—To find out the best method of burying sanai for green manuring of Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Sannhemp. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 27.11.1956. (iv) (a) 3 ploughings. (b) Broadcasting. (c) 40 srs./ac. (d) and (e) N.A. (v) Sannhemp buried. (vi) NP—755. (vii) Unirrigated. (viii) Interculturing and weeding. (ix) N.A. (x) 17.4.1957.

2. TREATMENTS :

Same as in expt. no. 56(46) on page 242.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) 60.5′×118′. (iii) 4. (iv) (a) 20′×62.5′. (b) 18′×60.5′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Mild attack of stem borer—affected plants were removed. (iii) Monthly tiller counting, height measurement, grain and straw yield. (iv) (a) No. (b) and (c) Nil. (v) (a) Pusa. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1229 lb./ac. (ii) 157.7 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	1081	1282	1288	1426	1273	1021

S.E./mean = 78.9 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 56(90).**

Site :- Govt. Agri. Farm, Piprakothi. **Type :- 'M'.**

Object :—To find out the best time and method of burying G.M. crop in Wheat fields.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Sannhemp. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 27.11.1956. (iv) (a) 3 ploughings. (b) Broadcasting. (c) 40 srs./ac. (d) and (e) N.A. (v) Nil. (vi) NP—755. (vii) Unirrigated. (viii) Interculturing and weeding. (ix) N.A. (x) 15.4.1957.

2. TREATMENTS :

T_1=Control.
T_2=*Sanai* sown in 1st week of July and burying in mid-August.
T_3=*Sanai* sown in 1st week of July and spreading in mid-August and turned in 1st week of September.
T_4=*Sanai* sown in 1st week of July and spreading in mid-August and turned in last week of September.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) 60.5′×78′. (iii) 6. (iv) (a) 20′×62.5′. (b) 18′×60.5′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Attack of stem borer—affected plants removed and eggs collected. (iii) Tiller counting, height measurement, grain and straw yield. (iv) (a) No. (b) and (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1375 lb./ac. (ii) 164.6 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_1	T_2	T_3	T_4
Av. yield	1346	1483	1253	1417

S.E./mean = 67.2 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 57(194).**

Site :- Distt. Agri. Farm, Purnea. **Type :- 'M'.**

Object :—To find out the best method of applying fertilizers to Wheat.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 24.10.1957. (iv) (a) N.A. (b) Behind the plough. (c) 80 lb./ac. (d) Row to row 10″. (e) N.A. (v) Nil. (vi) NP—799. (vii) Irrigated. (viii) 2 weedings. (ix) 1.05″. (x) 13 to 15.3.1958.

2. TREATMENTS :

3 methods of applying fertilizers : M_1=Broadcasting, M_2=With the seed and M_3=Below the seed.

3. DESIGN :

(i) R.B.D. (li) (a) 3. (b) N.A. (iii) 8. (iv) (a) 35½′×35½′. (b) 33′×33′. (v) 1¼′×1¼′. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Grain and straw yield. (iv) (a) and (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1077 lb./ac. (ii) 483.8 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3
Av. yield	1209	928	1095

S.E./mean = 171.1 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 57(173).**

Site :- Agri. Res. Instt., Pusa. **Type :- 'M'.**

Object :—To find the best G.M. crop for Wheat.

1. BASAL CONDITIONS:

(i) (a) Nil. (b) G.M. crop. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Pusa. (iii) 15.11.1957. (iv) (a) 4 ploughings. (b) Behind the plough. (c) 40 srs./ac. (d) Rows 10″ apart. (e) —. (v) Nil. (vi) NP—755. (vii) Irrigated. (viii) Weeding. (ix) 2.16″. (x) 4.4.1958.

2. TREATMENTS :

Same as in expt. no. 57(15) on page 244.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) and (b) 33′×33′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Fair. (b) Nil. (iii) Grain and straw yield. (iv) (a) and (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 284 lb./ac. (ii) 135.8 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	128	494	309	216	272

S.E./mean = 67.9 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 58(188).**

Site :- Agri. Res. Instt., Pusa. **Type :- 'M'.**

Object :—To find out the effect of different G.M. crops on Wheat.

1. BASAL CONDITIONS:

(i) (a) Nil. (b) G.M. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Pusa. (iii) 20.11.1958. (iv) (a) 2 ploughings by Bihar junior plough and one by *desi* plough. (b) Behind the plough. (c) 40 srs./ac. (d) Row to row 10″. (e) —. (v) Nil. (vi) N.A. (vii) Irrigated. (viii) Interculturing. (ix) 4.44″. (x) 14,15.4.1959.

2. TREATMENTS:

Same as in expt. no. 55(106) on page 243.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 36′3″×30′. (v) N.A. (vi) Yes

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) and (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 466 lb./ac. (ii) 122.4 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	536	528	500	475	398	358

S.E./mean = 61.2 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 56(186).**

Site :- Agri. Res. Instt., Pusa. **Type :- 'M'.**

Object :—To find the best method of applying fertilizers to Wheat crop.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Pusa. (iii) 4,5.12.1956. (iv) (a) 2 ploughings by cultivator and one by 5 tyned cultivator. (b) Behind the plough. (c) 40 srs./ac. (d) Row to row 10". (e) —. (v) Nil. (vi) NP—52 (late). (vii) Irrigated. (viii) Weeding. (ix) 11.45". (x) 10 to 12.4.1957.

2. TREATMENTS :

Same as in expt. no. 55(143) on page 251.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 8. (iv) (a) and (b) 1/40 ac. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1956—1957. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 460 lb./ac. (ii) 107.0 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3
Av. yield	444	417	518

S.E./mean = 37.8 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 57(174).**

Site :- Agri. Res. Instt., Pusa. **Type :- 'M'.**

Object :—To find the best method of applying fertilizers to Wheat crop.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Pusa. (iii) 23.11.1957. (iv) (a) 2 ploughings by mould board plough and one by cultivator. (b) Behind the plough. (c) 40 srs./ac. (d) Row to row 10". (e) —. (v) Nil. (vi) NP—52 (late). (vii) Irrigated. (viii) Weeding. (ix) 2.16". (x) 10.4.1958.

2. TREATMENTS to 4. GENERAL :

Same as in expt no. 55(143) on page 251.

5. RESULTS :

(i) 1009 lb./ac. (ii) 138.2 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac

Treatment	M_1	M_2	M_3
Av. yield	957	1003	1067

S.E./mean = 48.9 lb./ac.

Crop :- Wheat ***(Rabi).*** **Ref :- Bh. 57(176).**

Site :- Agri. Res. Instt., Pusa. **Type :- 'M'.**

Object :—To find out the best time and method of green manuring of Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil (b) Sannhemp. (c) Nil. (ii) Sandy loam. (b) Refer soil analysis, Pusa. (iii) 20.11.1957. (iv) (a) Sannhemp buried by ploughing, 2 ploughings by mould board plough and one by *desi* plough. (b) Behind the plough. (c) 40 srs./ac. (d) Row to row 10″. (e) —. (v) Nil. (vi) NP—755 (medium). (vii) Irrigated. (viii) Weeding. (ix) 2.16″. (x) 15.4.1958.

2. TREATMENTS .

Same as in expt. no. 56(90) on page 259.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) and (b) 33′×33′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain and straw yield. (iv) (a) and (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 333 lb./ac. (ii) 185.95 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatmeut	T_1	T_2	T_3	T_4
Av. yield	186	353	402	391

S.E./mean = 75.91 lb./ac.

Crop :- Wheat ***(Rabi).*** **Ref :- Bh. 57(175).**

Site :- Agri. Res. Instt., Pusa. **Type :- 'M'.**

Object :—To find the best method of burying sannhemp for G.M. on Wheat .

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Sannhemp. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Pusa. (iii) 20.11.1957. (iv) (a) *Sanai* buried by ploughing, followed by 2 ploughing by mould board plough and one by *desi* plough. (b) Behind the plough. (c) 40 srs./ac. (d) Row to row 10″. (e)—. (v) Nil. (vi) NP—755. (vii) Irrigated. (viii) Weeding. (ix) 2.16″. (x) 8.4.1958.

2. TREATMENTS

Same as in expt. no. 56(46) on page 242.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) and (b) 33′×33′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain and straw yield. (iv) (a) and (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 338 lb./ac. (ii) 158.8 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	288	375	267	416	370	309

S.E./mean = 79.4 lb./ac.

Crop :- Wheat. **Ref :- Bh. 55(59).**

Site :- Distt. Agri. Farm, Putida. **Type :- 'M'.**

Object ;—To test the effect of potash on the yield of Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Sweet potato. (c) Nil. (ii) (a) Clayey loam. (b) N.A. (iii) 5.11.1955. (iv) (a) 5 ploughings by *desi* plough. (b) Behind the plough. (c) 80 lb./ac. (d) Row to row 10". (e)—. (v) Nil. (vi) B.R.-319 (early). (vii) Irrigated. (vii) Weeding and hoeing. (ix) 5.22". (x) 8.3.1956.

2. TREATMENTS :

Same as in expt. no. 55(122) on page 255.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 26'×12'. (b) 24'×10'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Very good. (ii) Nil. (iii) Biometric observations and grain yield. (iv) (a) 1955—1956. (b) and (c) No. (v) (a) All Govt. Farms. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1666 lb./ac. (ii) 255.6 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	998	1758	1923	1866	1783

S.E./mean = 127.8 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 56(173).**

Site :- Distt. Agri. Farm, Putida. **Type :- 'M'.**

Object :—To test the effect of potash on the yield of Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Maize. (c) T.C.+A/S+Super (amount N.A.). (ii) (a) Clayey loam. (b) N.A. (iii) 4.11.1956. (iv) (a) 5 ploughings. (b) Behind the plough. (c) 80 lb./ac. (d) 10"×10". (e) N.A. (iv) Nil. (vi) BR—319. (vii) Irrigated. (viii) Hoeing and weeding. (ix) 1.33". (x) 21.2.1957.

2. TREATMENTS :

Same as in expt. no. 55(122) on page 255.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 36'×12'. (b) 34'×10'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Slight attack of orange—rust. (iii) Grain and straw yield. (iv) 1955—1956. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1168 lb./ac. (ii) 464.7 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	762	1276	1136	1198	1470

S.E./mean = 232.4 lb./ac.

Crop :- Wheat ***(Rabi).*** **Ref :- Bh. 57(141).**

Site :- Distt. Agri. Farm, Putida. **Type :- 'M'.**

Object :—To find the best method of applying fertilizers to Wheat crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) Nil. (ii) (a) Clayey loam. (b) N.A. (iii) 13.11.1957. (iv) (a) N.A. (b) Line sowing. (c) 40 srs./ac. (d) Row to row 10". (e) N.A. (v) Nil. (vi) N.A. (vii) Irrigated. (viii) Hoeing. (ix) 3.4". (x) 26 2.1958.

2. TREATMENTS :

Same as in expt. no. 55(143) on page 251.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) 24'×15'. (b) 22'×13'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) and (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2278 lb./ac. (ii) 305.2 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb. /ac.

Treatment	M_1	M_2	M_3
Av. yield	2298	2187	2350

S.E./mean = 124.6 lb./ac.

Crop :- Wheat ***(Rabi).*** **Ref :- Bh. 59(62).**

Site :- Distt. Agri. Farm, Putida. **Type :- 'M'.**

Object :—To see the effect of different G.M. crops on Wheat with or without phosphate.

1. BASAL CONDITIONS :

(i) (a) G.M. crops—Wheat. (b) G.M. crops. (c) Nil. (ii) (a) Clayey loam. (b) N.A. (iii) 27.11.1959. (iv) (a) 4 ploughings. (b) Line sowing. (c) 40 srs./ac. (d) Row to row 10". (e) N.A. (v) Nil. (vi) BR—319. (vii) Irrigated. (viii) Hoeing and weeding. (ix) 1.18". (x) 24.3.1960.

2. TREATMENTS:

9 manurial treatments : M_0=Control (no manure), M_1=G.M. with *sanai*, M_2=G.M. with *kalai*, M_3=G.M. with *moong*, M_4=G.M. with *dhaincha*, $M_5=M_1+M$, $M_6=M_2+M$, $M_7=M_3+M$ and $M_8=M_4+M$.

where M=40 lb./ac. of P_2O_5 as Super.
G.M. crops buried on 9.8.1959.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 3. (iv) (a) 28'×17'. (b) 26'×15'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil (iii) Grain and straw yield. (iv) (a) 1959—N.A. (b) No (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 410 lb./ac. (ii) 130.0 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8
Av. yield	402	493	402	388	354	512	388	297	455

S.E./mean = 75.1 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 57(139).**

Site :- Distt. Agri. Farm, Putida. **Type :- 'M'.**

Object :—To find out the best time and methods of applying G.M. to Wheat.

1. BASAL CONDITIONS :

(i) (a) *Sanai*—Wheat. (b) *Sanai*. (c) N.A. (ii) (a) Clayey Loam. (b) N.A. (iii) 7.12.1957. (iv) (a) 4 ploughings. (b) Behind the plough. (c) 40 srs./ac. (d) 10" between rows. (e) N.A. (v) As per treatments. (vi) NP—799. (vii) Irrigated. (viii) 1 hoeing and 2 weedings. (ix) 3.4". (x) 5.4.1958.

2. TREATMENTS :

T_0=Control.
T_1=*Sanai* grown and burried at bud stage.
T_2=*Sanai* grown and buried at 1'6" height from the ground.
T_3=*Sanai* grown and buried at 3' height from the ground.
T_4=*Sanai* grown and harvested at 1'6" height from the ground.
T_5=*Sanai* grown and harvested at 3' height from the ground.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 41'×13'. (b) 39'×11'. (v) 1' all round the plot. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1956—1957. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 902.6 lb./ac. (ii) 125.1 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5
Av. yield	752.1	1047.8	1108.8	970.6	745.6	790.6

S.E./mean = 62.6 lb./ac.

Crop :- Wheat. **Ref :- Bh. 54(58).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To see the effect of phosphate used with G.M. crop on soil fertility and Wheat yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai*. (c) As per treatments. (ii) (a) Sandy loam. (b) N.A. (iii) 17.11.1954. (iv) (a) Spading twice at an interval of 10 days. (b) Line sowing. (c) 108 lb./ac. (d) Rows 1' apart. (e) —. (v) Nil. (vi) NP—52 (late). (vii) Irrigated. (viii) Weeding and interculturing. (ix) 1.62". (x) 15.3.1955.

2. TREATMENTS :

5 manurial treatments : M_1=40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super at the time of sowing wheat, M_2=*Sanai* G.M.+40 lb./ac. of P_2O_5 as Super at sowing of wheat, M_3=*Sanai* G.M.+40 lb./ac. of P_2O_5 as Super to *Sanai*, M_4=*Sanai* G.M.+40 lb./ac. of P_2O_5 as Rock Phos. at sowing of wheat and M_5=*Sanai* G.M.+40 lb./ac. of P_2O_5 as Rock Phos. to *Sanai*.

3. DESIGN :

(i) R.B.D. (ii) (a) Nil. (b) Nil. (iii) 3. (iv) (a) and (b) 12′×9′. (v) N.A. (vi) —.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Yield of grain. (iv) and (v) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 769 lb./ac. (ii) 203.7 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3	M_4	M_5
Av. yield	1071	679	775	654	664

S.E./mean = 117.6 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 55(229).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To see the effect of phosphate used with G.M. crop on soil fertility and Wheat yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai*. (c) As per treatments. (ii) (a) Sandy loam. (b) N.A. (iii) 10.11.1955. (iv) (a) 3 ploughings. (b) Line sowing. (c) 3 oz./plot. (d) Row to row 1′. (e) —. (v) Nil. (vi) N.A. (vii) Irrigated. (viii) Weeding. (ix) 0.84″. (x) 22.3.1956.

2. TREATMENTS :

5 manurial treatments : M_1=Control (no manure), M_2=G.M. with *Sanai*, M_3=G.M. with *Sanai*+40 lb./ac. ag P_2O_5 as Super (half at sowing and half at burying of *Sanai*), M_4=M_3+ seed inoculation and M_5=M_2+seed inoculation.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 14′×11′. (b) 12′×9′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1955—1958. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 625 lb./ac. (ii) 191.2 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3	M_4	M_5
Av. yield	519	596	661	739	609

S.E./mean = 95.6 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 56(200).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To test the effect of phosphate used with G.M. crop on soil fertility and Wheat yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai*. (c) As per treatments. (ii) (a) Sandy loam. (b) N.A. (iii) 25.11.1956. (iv) (a) 3 ploughings. (b) Line sowing. (c) 3 oz./plot. (d) Row to row 1′. (e) —. (v) Nil. (vi) NP—52. (vii) Irrigated. (viii) Weeding. (ix) and (x) N.A.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 55(229) above.

5. RESULTS :

(i) 747 lb./ac. (ii) 116.0 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3	M_4	M_5
Av. yield	505	713	869	804	843

S.E./mean = 58.0 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 57(212).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To test the effect of phosphate used with G.M. crop on soil fertility and Wheat yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 5.11.1957. (iv) (a) 3 ploughings. (b) Line sowing. (c) 40 srs./ac. (d) Rows 1′ apart. (e) 1 to 2. (v) Nil. (vi) N.A. (vii) Irrigated. (viii) Weeding and hoeing. (ix) 0.06″. (x) 15.3.1958.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 55(229) on page 266.

5. RESULTS :

(i) 817 lb./ac. (ii) 125.1 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3	M_4	M_5
Av. yield	425	851	996	985	829

S.E./mean = 62.6 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 58(229).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To see the effect of phosphate used with G.M. crop on soil fertility and Wheat yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 13.11.1958. (iv) (a) 3 ploughings. (b) Line sowing. (c) 40 srs./ac. (d) Row to row 1′. (e) N.A. (v) Nil. (vi) NP—758. (vii) Irrigated. (viii) Weeding. (ix) 4.03″. (x) 5.4.1959.

2. TREATMENTS :

Same as expt. no. 55(229) on page 266.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) 14′×11′. (b) 12′×9′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Plants lodged. (ii) N.A. (iii) Grain and straw yield. (iv) (a) N.A. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) Heavy rain on 22.1.1959. (vii) Nil.

5. RESULTS :

(i) 765 lb./ac. (ii) 215.6 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3	M_4	M_5
Av. yield	446	892	964	881	643

S.E./mean = 96.4 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 59(156).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To test the effect of placement of Super on Wheat yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Maize. (c) 200 mds./ac. of F.Y.M. (ii) (a) Sandy loam. (b) N.A. (iii) 18.11.1958. (iv) (a) 3 ploughings—one with tractor. (b) Line sowing. (c) 40 srs/ac. (d) Rows $1\frac{1}{2}'$ apart. (e) 1. (v) Nil. (vi) NP—758. (vii) Irrigated. (viii) Weeding. (ix) 3.26". (x) 13.4.1959.

2. TREATMENTS :

M_0=Control.
M_1= 40 lb./ac. of N as A/S.
M_2=40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super at surface and
M_3=40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super at plough depth.

3. DESIGN :

(i) R B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) 44'×28'. (b) 42'×26'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Grain and straw yield. (iv) (a) to (c) No. (v) (a) Musheri and Nawadah. (b) Nil. (vi) Heavy rain on 22.1.1959. (vii) Nil.

5. RESULTS :

(i) 201 lb./ac. (ii) 51.0 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3
Av. yield	239	203	174	187

S.E./mean = 22.8 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 56(80).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To find out the best time and method of burying G.M. crop in Wheat fields.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) G.M. crop. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 27.11.1956. (iv) (a) 5 ploughings. (b) Behind the plough. (c) 40 srs./ac. (d) Rows 10" apart. (e) 2 to 3. (v) Nil. (vi) NP—52 (late). (vii) Irrigated. (viii) Hoeing and weeding. (ix) 5.78". (x) 12.4.1957.

2. TREATMENTS :

Same as in expt. no. 56(90) on page 259.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 40'×27'. (b) 38'×25'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Attack of yellow and brown rust. (iii) Tiller count, grain and straw yield. (iv) (a) 1956—1957. (b) No. (c) Nil. (v) (a) Kanke. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 751 lb./ac. (ii) 82.6 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_1	T_2	T_3	T_4
Av. yield	610	840	723	829

S.E./mean = 33.7 lb./ac.

Crop :- Wheat *(Rabi).* **Ref :- Bh. 57(155).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To find out the best time and method of burying G.M. crop in Wheat fields.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 24.12.1957. (iv) (a) 3 ploughings. (b) Behind the plough. (c) 40 srs./ac. (d) Rows 10" apart. (e) —. (v) Nil. (vi) NP—52 (late). (vii) Irrigated. (viii) Hoeing and weedings twice. (ix) 0.35". (x) 9.4.1958.

2. TREATMENTS :

Same as in expt. no. 56(90) on page 259.

3. DESIGN:

(i) R B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 40′×27. (b) 38′×25′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Grain yield. (iv) (a) 1956—1957. (b) No. (c) Nil. (v) (a) Musheri and Sepaya. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 225 lb./ac. (ii) 28.5 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_1	T_2	T_3	T_4
Av. yield	184	239	264	211

S.E./mean = 11.6 lb./ac.

Crop :- Wheat *(Rabi).* **Ref :- Bh. 56(207).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To test the effect of G.M. crop on the yield of Wheat.

1. BASAL CONDITIONS :

(i) (a) and (b) As per treatments. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 19.11.1956. (iv) (a) 3 spadings. (b) Line sowing. (c) 3 oz./plot. (d) Row to row 1′. (e) —. (v) Nil. (vi) NP—52. (vii) Irrigated. (viii) Hoeing. (ix) 6.64". (x) 24.4.1957.

2. TREATMENTS :

4 G.M. crops preceding wheat : M_1=*Kalai*, M_2=*Moong*, M_3=*Sanai* and M_4=*Guar*.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) 14′×11′. (b) 12′×9′. (v) 1′×1′. (vi) Yes.

4. GENERAL:

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1956—1957. (b) No. (c) Nil. (v) (a) Pusa. (b) Nil. (vi) Heavy rains at flowering time. (vii) Nil.

5. RESULTS:

(i) 653 lb./ac. (ii) 246.5 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3	M_4
Av. yield	747	560	705	601

S.E./mean = 110.2 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 57(150).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To study the effect of G.M. crops on the yield of Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) G.M. crops. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 24.12.1957. (iv) (a) 3 ploughings. (b) Behind the plough. (c) 40 srs./ac. (d) Rows 10″ apart. (e) N.A. (v) Nil. (vi) NP—52 (late). (vii) Irrigated. (viii) Hoeing and weeding twice. (ix) 0.35″. (x) 12.4.1958.

2. TREATMENTS :

5 G.M. crops preceding Wheat : M_0=Control (no G.M.), M_1=*Sanai*, M_2=*Kalai*, M_3=*Moong* and M_4=*Dhaincha*.

G.M. crops buried in *situ*.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 41′×28′. (b) 40′×27′. (v) 6″×6″. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Grain yield. (iv) (a) to (c) No. (v) (a) Sepaya and Pusa. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 306 lb./ac. (ii) 73.6. lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	234	292	326	291	387

S.E./mean = 36.8 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 57(214).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To study the effect of G.M. crops on Wheat yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) As per treatments. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 8.11.1957. (iv) 4 ploughings. (b) Line sowing. (c) 40 srs./ac. (d) Rows 1′ apart. (e) N.A. (v) Nil. (vi) N.A. (vii) Irrigated. (viii) Hoeing and weeding. (ix) 0.03″. (x) 17.3.1958.

2. TREATMENTS :

Same as in expt. no. 56(207) on page 269.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) 14′×11′. (b) 12′×9′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Grain yield. (iv) (a) to (c) No. (v) (a) Pusa and Sepaya. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 945 lb./ac. (ii) 375.6 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3	M_4
Av. yield	840	1146	975	820

S.E./mean = 168.0 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 58(233).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To study the effect of G.M. on succeeding Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) As per treatments. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 12.11.1958. (iv) (a) Green manure buried at site by spading ; 3 spadings before sowing. (b) Broadcast. (c) 40 srs./ac. (d) and (e) —. (v) Nil. (vi) NP—758. (vii) Irrigated. (viii) 1 weeding by *khurpi*. (ix) 3.75". (x) 5.4.1959.

2. TREATMENTS :

4 G.M. crops preceding wheat : M_1=*Kalai*, M_2=*Moong*, M_3=*Sanai* and M_4=*Guar*.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 57(214) on page 270.

5. RESULTS :

(i) 728.8 lb./ac. (ii) 503.6 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3	M_4
Av. yield	819.5	819.5	850.8	425.4

S.E./mean = 225.2 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 55(231).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To see the effect of different kinds of phosphates on Wheat yield.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 30.11.1955. (iv) (a) 3 ploughings. (b) Line sowing. (c) 3 oz./plot. (d) Rows 1' apart. (e) —. (v) and (vi) N.A. (vii) Irrigated. (ix) Weeding. (ix) 0.84". (x) 3.4.1956.

2. TREATMENTS :

4 manurial treatments : M_0=Control, M_1=40 lb./ac. of N as A/S, M_2=M_1+40 lb./ac. of P_2O_5 as Supe and M_3=M_1+40 lb./ac. of P_2O_5 as Dical. Phos.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) 14'×11'. (b) 12'×9'. (v) 1'×1'. (vi) Yes.

4. GENERAL:

(i) and (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1955—1958. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 732 lb./ac. (ii) 284.7 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3
Av. yield	635	648	907	739

S.E./mean = 142.4 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 58(236).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To test the effect of different kinds of phosphate on Wheat yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Maize. (c) 200 md./ac. of F.Y.M. (ii) (a) Sandy loam. (b) N.A. (iii) 19.11.1958. (iv) (a) 1 ploughing by tractor and 2 by *desi* plough. (b) Line sowing. (c) 40 srs./ac. (d) Rows 1½′ apart. (e) N.A. (v) Nil. (vi) NP—758. (vii) Irrigated. (viii) Earthing once. (ix) 3.15″. (x) 14.4.1959.

2. TREATMENTS :

6 manurial treatments : M_0=Control, M_1=40 lb./ac. of N as A/S, $M_2=M_1+40$ lb /ac. of P_2O_5 as Super, $M_3=M_1+40$ lb./ac. of P_2O_5 as B.M., $M_4=M_1+40$ lb./ac. of P_2O_5 as Rock Phos. and $M_5=M_1+40$ lb./ac. of P_2O_5 as Dical. Phos.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 5. (iv) (a) 44′×28′. (b) 42′×26′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1955—1958. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 173 lb /ac. (ii) 47.7 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	150	190	172	158	198	167

S.E./mean = 21.3 lb./ac.

Crop :- Wheat ***(Rabi).*** **Ref :- Bh. 55(230).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To compare the effects of different kinds of phosphate on soil fertility and Wheat yield.

1. BASAL CONDITIONS:

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) N A. (iii) 2.12.1955. (iv) (a) 3 ploughings. (b) Line sowing. (c) 3 oz./plot. (d) Row to row 1′. (e) N.A. (v) and (vi) N.A. (vii) Irrigated. (viii) Weeding. (ix) 0.84″. (x) 5.4.1956.

2. TREATMENTS :

6 sources of P_2O_5 : S_0=Control (no manure), S_1=Super, S_2=Rock Phos., S_3=B.M., S_4=Hyper Phos. and S_5=Dical. Phos.

P_2O_5 applied at 40 lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 14′×11′. (b) 12′×9′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Grain and straw yield. (iv) (a) and (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 711 lb./ac. (ii) 203.8 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	635	869	596	804	635	726

S.E./mean = 101.9 lb./ac.

Crop :- Wheat ***(Rabi).*** **Ref :- Bh. 59(148).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To find the relative efficiency of different nitrogenous fertilizers on Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Jowar.* (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 25.11.1959. (iv) 4 ploughings with *desi* plough. (b) Line sowing. (c) 40 srs./ac. (d) Rows 1¼′ apart. (e) —. (v) Nil. (vi) NP—799. (vii) Irrigated. (viii) Weeding. (ix) 3.20″. (x) 28.3.1960.

2. TREATMENTS :

14 manurial treatments : M_1= Control (no manure), M_2= M′, M_3= M′+D_1 as A/S, M_4=M′+D_2 as A/S, M_5 = M′+D_1 as Urea (at sowing), M_6=M′+ D_2 as Urea at (sowing), M_7=M′+ D_1 as A/S/N, M_8= M′+ D_2 as A/S/N, M_9= M′+ D_1 as C.A/N, M_{10}=M′+D_2 as C A N, M_{11}= M′+ D_1 as A/C, M_{12}=M′+ D_2 as A/C, M_{13}= M′+ D_1 as Urea (applied dry a fortnight before sowing) and M_{14}= M′+ D_2 as Urea (applied dry a fortnight before sowing).

where M′=30 lb /ac. of P_2O_5 as Super+ 30 lb./ac. of K_2O as Mur. Pot., D_1=25 lb./ac. of N and D_2= 50 lb /ac. of N.

3. DESIGN :

(i) R.B.D. (ii) (a) 14. (b) N.A. (iii) 3. (iv) (a) 31′×21′. (b) 29′×19′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1959—N.A. (b) N.A. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 852 lb./ac. (ii) 226.3 lb /ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3	M_4	M_5	M_6	M_7
Av. yield	531	698	896	1116	1067	665	815

Treatment	M_8	M_9	M_{10}	M_{11}	M_{12}	M_{13}	M_{14}
Av. yield	890	1046	890	805	826	767	922

S.E./mean = 130.7 lb./ac.

Crop :- Wheat ***(Rabi).*** **Ref :- Bh. 56(81).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To find out the best method of applying fertilizers to Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow in *Kharif.* (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 5.12.1956. (iv) (a) 4 ploughings by *desi* plough. (b) Behind the plough. (c) 40 srs./ac. (d) 1′ between rows. (e) —. (v) As per treatments. (vi) NP—52 (late). (vii) Irrigated. (viii) Hoeing and weeding. (ix) 5.67″. (x) 27.4.1957.

2. TREATMENTS :

3 method of applying fertilizers : M_1=By broadcasting, M_2=With seed and M_3=Below seed.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) 50′6″×45′. (iii) 8. (iv) (a) 49′×20′. (b) 47′×18′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Attack of black and brown rust. (iii) Population count, no. of tillers, grain and straw yield. (iv) (a) 1956—1957. (b) No. (c) Nil. (v) (a) Purnea, Chianki, Kanke and Piprakothi. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 904 lb./ac. (ii) 148.3 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3
Av. yield	877	973	862

S.E./mean = 52.43 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 57(153).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To find out the best method of applying fertilizers to W heat crop.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 20.11.1957. (iv) (a) 3 ploughings by *desi* plough. (b) N.A. (c) 80 lb./ac. (d) Rows 10" apart. (e) N.A. (v) Nil. (vi) NP—52 (late). (vii) Irrigated. (viii) Hoeing. (ix) 0.06". (x) 25,26.3.1958.

2. TREATMENTS :

3 methods of applying manure : M_1=Broadcasting, M_2=With seed and M_3=Below seed.
Manure applied as 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 7. (iv) (a) N.A. (b) 36'×30'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) 1956—1957. (b) No. (c) Nil. (v) (a) Pusa and Sepaya. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 2957 lb./ac. (ii) 524.9 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3
Av. yield	2937	2864	3070

S.E./mean = 198.4 lb./ac.

Crop : Wheat *(Rabi)*. **Ref :- Bh. 56(76).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To find out the best method of burying G.M. crop in Wheat fields.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai*. (c) 20 lb./ac. of P_2O_5 as Super at sowing. (ii) (a) Sandy loam. (b) N.A. (iii) 27.11.1956. (iv) (a) 2 ploughings. (b) Broadcasting. (c) 40 srs./ac. (d) and (e)—. (v) 20 lb /ac. of P_2O_5 as Super to *sanai*. (vi) BR—319 (early). (vii) Irrigated. (viii) Hoeing and weeding. (ix) 6.0". (x) 5.4.1957.

2. TREATMENTS :

6 manurial treatments : M_0=Control (no manure), M_1=Sannhemp grown and buried in at bud stage, M_2=Sannhemp grown and harvested at bud stage at 6" from the ground, M_3=Sannhemp grown and harvested at 3" from the ground, M_4=Sannhemp from M_2 plots incorporated and M_5=Sannhemp from M_3 plots incorporated.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) 99'×72'. (iii) 4. (iv) (a) 72'×15'. (b) 71'×14'. (v) 6"×6". (vi) Yes.

4. GENERAL :

(i) Average. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1956—1957. (b) No. (c) Nil. (v) (a) Kanke, Sepaya, Musheri, Piprakothi, Putida and Pusa. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 583 lb./ac. (ii) 116.8 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	430	672	489	502	586	821

S.E./mean = 58.4 lb./ac.

Crop :- Wheat *(Rabi).*

Ref :- Bh. 57(152).

Site :- Agri. Res. Instt., Sabour.

Type :- 'M'.

Object :—To find out the best method of burying G.M. crop in Wheat fields.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) G.M. crop. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 24.12.1957. (iv) (a) 2 ploughings. (b) Behind the plough. (c) 40 srs./ac. (d) Rows 10" apart. (e) —. (v) Nil. (vi) NP—52 (late). (vii) Irrigated. (viii) Hoeing and weeding twice. (ix) 0.35". (x) 12.4.1958.

2. TREATMENTS :

Same as in expt. no. 56(76) on page 274.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 3. (iv) (a) 41'×28'. (b) 40'×27'. (v) 6"×6". (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Grain yield. (iv) (a) 1956—1957. (b) No. (c) N.A. (v) [(a) Pipra kothi and Pusa. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 283 lb./ac. (b) 44.7 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	249	336	289	292	235	296

S.E./mean = 25.8 lb./ac.

Crop :- Wheat *(Rabi).*

Ref :- Bh. 59(150).

Site :- Agri. Res. Instt., Sabour.

Type :- 'M'.

Object :—To study the effect of potash on Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Jowar.* (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 26.11.1959. (iv) (a) 4 ploughings (b) Line sowing. (c) 40 srs./ac. (d) Rows 1¼' apart. (e) N.A. (v) Nil. (vi) NP—799. (vii) Irrigated. (viii) Hoeing. (ix) 3.20". (x) 3.4.1960.

2. TREATMENTS :

Same as in expt. no. 55(122) on page 255.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 29'×28'. (b) 27'×26'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Grain and straw yield. (iv) (a) and (b) No. (c) Nil. (v) (a) Banka, Kanke and Pusa. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 795 lb./ac. (ii) 131.7 lb./ac. (iii) Treatment differences are significant. (iv) Av. yeild of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	591	759	796	874	956

S.E./mean = 65.91 b./ac.

Crop :- Wheat. **Ref :- Bh. 54(62).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To test if by H_2SO_4 treatment Rock Phos. and B.M. can be as effective as Super to Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Maize. (c) As per treatments. (ii) (a) Sandy loam. (b) N.A. (iii) 19.11.1954. (iv) (a) 2 ploughings. (b) Line sowing. (c) 4 oz /plot. (d) Row to row 1′. (e) —. (v) Nil. (vi) NP—52 (late). (vii) Irrigated. (viii) Weeding and interculturing twice. (ix) 1.62″. (x) 20.3.1955.

2. TREATMENTS :

10 manurial treatments : M_1=Control (no manure), M_2=40 lb./ac. of N as A/S, $M_3=M_2+M'$ as Super, $M_4=M_2+M'$ as Rock Phos., $M_5=M_3+2$ lb./plot of H_2SO_4, $M_6=M_4+2$ lb./plot of H_2SO_4, M_7=40 lb./ac. of N as compost, $M_8=M_7+M'$ as Super, $M_9=M_7+M'$ as Rock Phos. and $M_{10}=M_7+M_2+M'$ as B.M.

where M'=40 lb./ac. of P_2O_5.

Compost is applied 1 month before sowing, Rock Phos. and B.M. 15 days before sowing and Super at sowing, method of application in all the cases being broadcasting. H_2SO_4 diluted with 7 times, as much water sprayed a week before sowing.

3. DESIGN :

(i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 6. (iv) (a) and (b) 12′×9′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Grain and straw yield. (iv) and (v) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 980 lb./ac. (ii) 240.9 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8	M_9	M_{10}
Av. yield	461	1503	1075	1396	1126	1365	743	759	662	709

S.E./mean = 98.3 lb./ac.

Crop :- Wheat. **Ref :- Bh. 54(61).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To test the comperative effect of A/S and liquid Ammonia on Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Maize. (c) As per treatments. (ii) (a) Sandy loam. (b) N.A. (iii) 29.11.1954. (iv) (a) 2 ploughings. (b) Sown in line. (c) 4 ozs./plot. (d) Row to row 1′. (e) —. (v) Nil. (vi) NP—52 (late). (vii) Irrigated. (viii) Weeding and interculturing. (ix) 1.62″. (x) 17.3.1955.

2. TREATMENTS :

5 manurial treatments : M_0=Control (no manure), M_1=20 lb./ac. of N as A/S, M_2=20 lb./ac. of N as liquid Ammonia, M_3=40 lb./ac. of N as A/S and M_4=40 lb./ac. of N as liquid Ammonia.

A/S applied at sowing. Liquid Ammonia applied in rows with running tap water and covered with soil.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) and (b) 12′×9′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Grain and straw yield. (iv) (a) to (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 805 lb./ac. (ii) 237.5 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	474	1077	730	939	804

S.E./mean = 118.8 lb./ac.

Crop :- Wheat. **Ref :- Bh. 54(59).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To test the residual effect of seed and soil inoculation with root nodule bacteria on Wheat yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Moong*. (c) As per treatments. (ii) (a) Sandy loam. (b) N.A. (iii) 20.11.1954. (iv) (a) 2 ploughings. (b) Line sowing. (c) 4 ozs./plot. (d) Row to row 1′. (e) —. (v) Nil. (vi) NP—52 (late). (vii) Irrigated. (viii) Weeding and interculturing. (ix) 1.62″. (x) 16 3.1955.

2. TREATMENTS .

Residual effect of—T_1= No inoculation, T_2=Soil inoculation, T_3= Seed inoculation, T_4=60 lb./ac. of P_2O_5 as Super, $T_5=T_2+T_4$ and $T_6=T_3+T_4$.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 2. (iv) (a) and (b) 12′×9′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Straw and grain yield. (iv) (a) to (c) No. (v) (a) and (b) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 1069 lb./ac. (ii) 199.5 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	983	946	1107	1235	1067	1078

S.E./mean = 141.1 lb./ac.

Crop :- Wheat. **Ref :- Bh. 54(60).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To test the residual effect of seed and soil inoculation with root nodule bacteria on Wheat yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Kalai*. (c) As per treatments. (ii) (a) Sandy loam. (b) N.A. (iii) 20.11.1954. (iv) (a) 2 ploughings. (b) Line sowing. (c) 4 ozs./plot. (d) Rows 1″ apart. (e) —. (v) Nil. (vi) NP—52 (late). (vii) Irrigated. (viii) 2 weedings with intercultures at an interval of 15 days. (ix) 1.62″. (x) 16.3.1955.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 54(59) above.

5. RESULTS :

(i) 963 lb./ac. (ii) 188.7 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	965	799	1057	909	969	1077

S.E./mean = 133.4 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 57(211).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To test the effect of trace elements on Wheat yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Kalai.* (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 6.11.1957. (iv) (a) 4 ploughings. (b) Line sowing. (c) 40 srs./ac. (d) Rows 1′ apart. (e) 1 to 2. (v) Nil. (vi) N.A. (vii) Irrigated. (viii) Weeding twice. (ix) 0.06″. (x) 13.2.1958.

2. TREATMENTS :

14 manurial treatments : M_1=Control (no manure), M_2=10 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super+40 lb./ac.of K_2O as Mur. Pot., $M_3=M_2+10$ lb./ac. of Mn as $MnSO_4$, $M_4=M_2+20$ lb./ac. of Mn as $MnSO_4$. $M_5=M_2+10$ lb./ac. of Zn as $ZnSO_4$, $M_6=M_2+20$ lb./ac. of Zn as $ZnSO_4$, $M_7=M_2+10$ lb./ac. of B as Borax, $M_3=M_2+20$ lb./ac. of Bo as Borax, $M_9=M_2+10$ of lb./ac. Cu as $CuSo_4$, $M_{10}=M_2+20$ lb./ac. of Cu as $CuSO_4$, $M_{11}=M_2+10$ lb./ac. of Fe as $FeSo_4$, $M_{12}=M_2+20$ lb /ac. of Fe as $FeSO_4$, $M_{13}=M_2+1$ lb./ac. of Mo as Molybdate and $M_{14}=M_2+2$ lb./ac. of Mo as Molybdate.

3. DESIGN :

(i) R.B.D. (ii) (a) 14. (b) N.A. (iii) 4. (iv) (a) 14′×11′. (b) 12′×9′. (v) 1′×1′. (vi) Yes.

GENERAL :

(i) Fair. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1957—1959. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2019 lb./ac. (ii) 314.3 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3	M_4	M_5	M_6	M_7
Av. yield	1478	2198	2029	2152	2068	1802	1789

Treatment	M_8	M_9	M_{10}	M_{11}	M_{12}	M_{13}	M_{14}
Av. yield	2198	2120	2061	2191	1730	2314	2139

S.E./mean = 157.2 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 58(228).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object —To test the effect of trace elements on Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Kalai.* (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 25.11.1958. (iv) (a) 3 ploughings. (b) Line sowing. (c) 40 srs./ac. (d) Rows 1′ apart. (e) Nil. (v) Nil. (vi) NP—758. (vii) Irrigated. (viii) Weeding. (ix) 4.03″. (x) 6.4.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 57(211) on page 277.

4. GENERAL :

(i) Crop lodged. (ii) N.A. (iii) Grain yield. (iv) (a) 1957—1959. (b) and (c) N.A. (v) (a) and (b) N.A. (vi) Heavy rains on 22.1.1959. (vii) Nil.

5. RESULTS :

(i) 1283 lb./ac. (ii) 335.7 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3	M_4	M_5	M_6	M_7
Av. yield	1128	1530	1154	1452	1400	1257	1154

Treatment	M_8	M_9	M_{10}	M_{11}	M_{12}	M_{13}	M_{14}
Av. yield	1349	1192	1568	1089	1284	985	1414

S.E./mean = 167.9 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 59(163).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To see the effect of trace elements on Wheat yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Maize. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 23.12.1959. (iv) (a) 3 ploughings. (b) Line sowing. (c) 40 srs./ac. (d) Rows 1′ apart. (e) N.A. (v) Nil. (vi) NP—799. (vii) Irrigated. (viii) Weeding and hoeing once. (ix) 1.5″. (x) 12.4.1960.

2. TREATMENTS :

Same as in expt. no. 57(211) on page 277.

3. DESIGN :

(i) R.B.D. (ii) (a) 14. (b) N.A. (iii) 4. (iv) (a) 14′×11′ (b) 12′×9′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1959—N.A. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 566 lb./ac. (ii) 192.6 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3	M_4	M_5	M_6	M_7
Av. yield	505	557	622	493	648	570	518

Treatment	M_8	M_9	M_{10}	M_{11}	M_{12}	M_{13}	M_{14}
Av. yield	739	493	700	545	453	570	509

S.E./mean = 96.3 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 59(157).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To test the effect of trace elements on Wheat yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Jowar*. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 29.11.1959. (iv) (a) 4 ploughings. (b) Line sowing. (c) 40 srs./ac. (b) Rows 1¼′ apart. (e) N.A. (v) Nil. (vi) NP—799. (vii) Irrigated. (viii) Weeding. (ix) 1.60″. (x) 29.3.1960.

2. TREATMENTS :

Same as in expt. no. 57(211) on page 277 with dose of N is 40 lb./ac. in M_2.

3. DESIGN :

(i) R.B.D. (ii) (a) 14. (b) N.A. (iii) 4. (iv) (a) 31′×21′. (b) 29′×19′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

Same as in expt. no. 57(211) on page 277.

5. RESULTS :

(i) 1968 lb./ac. (ii) 576.8 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3	M_4	M_5	M_6	M_7
Av. yield	1497	1985	1971	2165	2198	1941	1667

Treatment	M_8	M_9	M_{10}	M_{11}	M_{12}	M_{13}	M_{14}
Av. yield	2048	1926	2305	1997	2099	2180	1567

S.E./mean = 288.4 lb./ac.

Crop :- Wheat ***(Rabi).*** **Ref :- Bh. 57(159).**
Site :- Distt. Agri. Farm, Saharsa. **Type :- 'M'.**

Object :—To study the effect of G.M. crops on the yield of Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) G.M. crops. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 23.11.1957. (iv) (a) 8 ploughings. (b) Behind the plough. (c) 80 lb./ac. (d) Rows 10" apart. (e) N.A. (v) Nil. (vi) NP—52. (vii) Unirrigated. (viii) 1 weeding. (ix) Nil. (x) 28.3.1958.

2. TREATMENTS :

Same as in expt. no 57(150) on page 270.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 33′×29′. (b) 31′×27′. (v) 1′×1′. (vi) Yes.

4 GENERAL :

(i) Not good. (ii) Affected by orange rust. (iii) Grain and straw yield. (iv) (a) to (c) No. (v) (a) and (b) N.A. (vi) Drought occured. (vii) Nil.

5. RESULTS :

(i) 757 lb./ac. (ii) 106.5 lb./ac. (iii) Treatment differences are not significant. (iv) Av yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	796	669	830	703	789

S.E./mean = 53.3 lb./ac.

Crop :- Wheat ***(Rabi).*** **Ref :- Bh. 57(158).**
Site :- Distt. Agri. Farm, Saharsa. **Type :- 'M'.**

Object :—To find out the best method of burying G.M. for Wheat.

1. BASAL CONDITIONS :

(I) (a) to (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 21.11.1957. (iv) (a) 8 ploughings. (b) Behind the plough. (c) 80 lb./ac. (d) Rows 10" apart. (e) N.A. (v) Nil. (vi) NP—52. (vii) Unirrigated. (viii) Weeding. (ix) Nil. (x) 30.3.1958.

2. TREATMENTS :

Same as in expt. no. 56(76) on page 274.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A (iii) 4. (iv) (a) 42′×18′. (b) 41′×17′. (v) 1′×1′ (vi) Yes.

4. GENERAL :

(i) Not good. (ii) Affected by orange rust. (iii) Grain and straw yield. (iv) (a) and (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) Drought occured. (vii) Nil.

5. RESULTS :

(i) 687 lb./ac. (ii) 104.6 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	643	771	771	675	643	619

S.E./mean = 52.3 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 55(218).**

Site :- Distt. Agri. Farm, Saharsa. **Type :- 'M'.**

Object :—To test the effect of potash on the yield of Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 23.11.1955. (iv) (a) 7 ploughings. (b) Behind the plough. (c) 80 lb./ac. (d) Rows 10" apart. (e) —. (v) Nil. (vi) BR—319. (vii) Un-irrigated. (viii) Nil. (ix) 8.20". (x) 21.3.1956.

2. TREATMENTS :

Same as in expt. no. 59(150) on page 275.

3. DESIGN :

(i) R.B.D. (i) (a) 5. (b) N.A. (iii) 4. (iv) (a) 42'×29'. (b) 40'×27'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) and (b) No. (c) Nil. (v) (a) Banka, Kanke and Pusa. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 509 lb./ac. (ii) 129.7 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	513	528	502	560	441

S.E./mean = 64.9 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 59(66).**

Site :- Govt. Agri. Farm, Sepaya. **Type :- 'M'.**

Object :—To test the effect of trace elements on Wheat yield.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 23.11.1959. (iv) (a) 2 ploughings by Bihar plough. (b) Behind the plough. (c) 80 lb./ac. (d) Rows 10" apart. (e) —. (v) Nil. (vi) NP—799. (vii) Irrigated. (viii) Weeding. (ix) N.A. (x) 18, 19.4.1959.

2. TREATMENTS :

Same as in expt. no. 59(157) on page 279.

3. DESIGN :

(i) R.B.D. (ii) (a) 14. (b) N.A. (iii) 4. (iv) (a) 27'×24'. (b) 25'×22'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1959—N.A. (b) Yes. (c) Nil. (v) (a) Sabour. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1027 lb./ac. (ii) 40.4 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3	M_4	M_5	M_6	M_7
Av. yield	591	1178	1301	1018	985	1136	941
Treatment	M_8	M_9	M_{10}	M_{11}	M_{12}	M_{13}	M_{14}
Av. yield	1229	1028	1280	879	1034	848	933

S.E./mean = 20.2 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 59(67).**

Site :- Govt. Agri. Farm, Sepaya. **Type :- 'M'.**

Object :—To study the effect of potash on Wheat yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Moong*. (c) Nil. (ii) (a) Clay loam. (b) N.A. (iii) 21.11.1959. (iv) (a) 2 ploughings by Bihar plough. (b) Behind the plough. (c) 80 lb./ac. (d) Rows 10″ apart. (e) —. (v) Nil. (vi) NP—799. (vii) Irrigated. (viii) Weeding. (ix) 2.82″. (x) 8, 9.4.1959.

2. TREATMENTS :

Same as in expt. no. 59(150) on page 275.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 40′×34′. (b) 36′×30′. (v) 2′×2′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1959—N.A. (b) No. (c) Nil. (v) (a) Banka, Kanke, Sabour and Pusa. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 972 lb./ac. (ii) 51.9 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	643	778	1141	944	1356

S.E./mean = 26.0 lb./ac.

Crop : Wheat *(Rabi)*. **Ref :- Bh. 56(116).**

Site :- Govt. Agri. Farm, Sepaya. **Type :- 'M'.**

Object :—To test the effect of deep placements of fertilizers on Wheat crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Maize. (c) N.A. (ii) (a) Clayey loam. (b) N.A. (iii) 27.11.1956. (iv) (a) 4 ploughings with Bihar plough. (b) Behind the plough. (c) 40 srs./ac. (d) Rows 1′ apart. (e)—. (v) Nil. (vi) NP—755. (vii) Irrigated. (viii) Weeding and earthing. (ix) 1.90″. (x) 6.4.1957.

2. TREATMENTS :

Same as in expt. no. 59(156) on page 278.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) and (b) 33′×22′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1956—1958. (b) Yes. (c) Nil. (v) (a) Musheri. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 896 lb./ac. (ii) 72.5 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3
Av. yield	635	793	965	1190

S.E./mean = 32.4 lb./ac.

Crop : Wheat *(Rabi).* **Ref :- Bh. 57(127).**

Site : Govt. Agri. Farm, Sepaya. **Type :- 'M'.**

Object :—To test the effect of deep placements of fertizers on Wheat crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (a) Soyabean. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 3.11.1957. (iv) (a) 2 ploughings by Bihar plough. (b) Behind the plough (c) 40 srs./ac. (d) Rows 10" apart. (e)—. (v) Nil. (vi) NP—755. (vii) Irrigated. (viii) 1 Weeding. (ix) 1.09". (x) 12.4.1958.

2. TREAMENTS :

Same as in expt. no. 59(156) on page 268.

3. DESIGN ;

(i) R.B.D. (ii) 4. (b) N.A. (iii) 5. (iv) (a) 29½'×23'. (b) 27'×20'. (v) 1½'×1½'. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Tiller no., grain and straw yield. (iv) (a) 1956—1958. (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 456 lb./ac. (ii) 182.7 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3
Av. yield	290	387	532	613

S.E./mean = 81.7 lb./ac.

Crop :- Wheat *(Rabi).* **Ref :- Bh. 58(112).**

Site :- Govt. Agri. Farm, Sepaya. **Type :- 'M'.**

Object :—To test the effect of deep placement of fertilizers on Wheat crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Jowar.* (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 14.11.1958. (iv) (a) 2 ploughings by Bihar plough. (b) Behind the plough. (c) 80 lb./ac. (d) Rows 10" apart. (e) —. (v) Nil. (vi) NP—755. (vii) Irrigated. (viii) Weeding. (ix) 2.44". (x) 24.4.1959.

2. TREATMENTS :

Same as in expt. no. 59(156) on page 268.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) 48'×14'. (b) 45'×12'. (v) 1½'×1'. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1956—1958. (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 646 lb./ac. (ii) 250.7 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3
Av. yield	355	565	742	920

S.E./mean = 112.1 lb./ac.

Crop :- Wheat (*Rabi*). **Ref :- Bh. 55(197).**
Site :- Govt. Agri. Farm, Sepaya. **Type :- 'M'.**

Object :—To find out the best method of applying fertilizers to Wheat crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Maize. (c) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (ii) (a) Clay loam. (b) N.A. (iii) 16.11.1955. (iv) (a) 4 ploughing by *desi* plough. (b) Behind the plough. (c) 40 srs./ac. (d) Rows 1′ apart. (e) —. (v) Nil. (vi) NP—755. (vii) Irrigated. (viii) Hoeing and weeding. (ix) 2.20″. (x) 9.4.1956.

2. TREATMENTS :

Same as in expt. no. 57(153) on page 274.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) 208′×105′. (iii) 6. (iv) (a) 33′×33′. (b) 31½′×31½′. (v) 9″×9″. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) to (c) No. (v) (a) Banka, Bikramganj, Kanke and Pusa. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 970 lb./ac. (ii) 155.0 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3
Av. yield	846	931	1134

S.E./mean = 63.3 lb./ac.

Crop :- Wheat (*Rabi*). **Ref :- Bh. 55(198).**
Site :- Govt. Agri. Farm, Sepaya. **Type :- 'M'.**

Object :—To find out the best time and method of burying G.M. crop in Wheat fields.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) G.M. crop. (c) Nil. (ii) (a) Clay loam. (b) N.A. (iii) 15.11.1955. (iv) (a) 4 poughings by *desi* plough. (b) Behind the plough. (c) 40 srs./ac. (d) Rows 1′ apart. (e) —. (v) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super before sowing. (vi) NP—52. (vii) Irrigated. (viii) Hoeing and weeding. (ix) 2.15″. (x) 8.4.1956.

2. TREATMENTS :

Same as in expt. no. 56(90) on page 259.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) 126′×72′. (iii) 6. (iv) (a) 72′×15′. (b) 70½′×13½′. (v) 9″×9″. (vi) Yes.

4. GENERAL :

(i) Average. (ii) Mild attack of yellow brown and black rust on 15.1.1956. (iii) Grain and straw yield. (iv) (a) to (c) No. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 628 lb./ac. (ii) 229.5 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_1	T_2	T_3	T_4
Av. yield	333	993	627	557

S.E./mean = 93.7 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 55(199).**

Site :- Govt. Agri. Farm, Sepaya. **Type :- 'M'.**

Object :—To study the effect of G.M. crops on the yield of Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) G.M. crops. (c) Nil. (ii) (a) Clayey loam. (b) N.A. (iii) 15.11 1955. (iv) (a) 5 ploughings. (b) Behind the plough. (c) 40 srs./ac. (d) Rows 1′ apart. (e) —. (v) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super before sowing. (vi) NP—52. (vii) Irrigated. (viii) Hoeing and weeding. (ix) 2.15″. (x) 8.4.1956.

2. TREATMENTS :

Same as in expt. no. 55(106) on page 243.

2. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) 126′×72′. (iii) 4. (iv) (a) 72′×15′. (b) 70½′×13½′. (v) 9″×9″. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Mild attack of yellow, brown and black rust. (iii) Grain and straw yield. (iv) (a) to (c) N.A (v) (a) Pusa and Sabour. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 616 lb./ac. (ii) 241.2 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	307	956	538	736	341	815

S.E./mean = 120.6 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 55(200).**

Site :- Govt. Agri. Farm, Sepaya. **Type :- 'M'.**

Object :—To find out the best method of burying G.M. crops in Wheat fields.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) G.M. crop *Sanai.* (c) Nil. (ii) (a) Clay loam. (b) N A. (iii) 15.11.1955. (iv) (a) 4 times ploughing by country plough. (b) Behind the plough. (c) 40 srs./ac. (d) Rows 1′ apart. (e) —. (v) 40 lb./ac. of N as A/S+40 of lb./ac. P_2O_5 as Super before sowing. (vi) NP—52. (vii) Irrigated. (viii) Hoeing and weeding. (ix) 2.15″. (x) 7.4.1956.

2. TREATMENTS :

Same as in expt. no. 56(76) on page 274.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) 126′×72′. (iii) 6. (iv) (a) 72′×15′. (b) 70½′×13½′. (v) 9″×9″. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Mild attack of yellow, brown and black rust in the middle of January 1956. (iii) Grain and straw yield. (iv) (a) 1955—1956. (b) No. (c) Nil. (v) (a) Pusa. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 520 lb./ac. (ii) 153.0 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	382	728	618	490	471	431

S.E./mean = 62.5 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 56(113).**

Site :- Govt. Agri. Farm, Sepaya. **Type :- 'M'.**

Object :—To find out the best method of burying G.M. crops in Wheat fields.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Sugarcane. (c) 15 C.L./ac. of compost+10 md./ac. of castor cake+1.25 md./ac. of A/S+2.5 mds./ac. of Super. (ii) (a) Clayey loam. (b) N.A. (iii) 23.11.1956 (iv) (a) 5 ploughings by Bihar plough. (b) Behind the plough. (c) 40 srs./ac. (d) Rows 1′ apart. (e) —. (v) Nil. (vi) NP—755 (late). (vii) Irrigated. (viii) Hoeing and weeding twice. (ix) 1.85″. (x) 9, 10.4.1957.

2. TREATMENTS :

Same as in expt. no. 56(76) on page 274.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) 126′×72′. (iii) 6. (iv) (a) 33′×22′. (b) 31⅓′×20⅓′. (v) 9″×9″. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Attack of yellow and brown rust on Wheat. (iii) Grain and straw yield. (iv) (a) 1955—1956. (b) No. (c) Nil. (v) (a) Pusa. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 762 lb./ac. (ii) 187.6 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	703	864	711	787	779	728

S.E./mean = 76.6 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 55(249).**

Site :- Govt. Agri. Farm, Siris. **Type :- 'M'.**

Object :—To study the effect of different G.M. crops on the yield of Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) As per treatments. (c) Nil. (ii) (a) Clayey. (b) N.A. (iii) 15.12.1955. (iv) (a) 4 ploughings. (b) Behind the plough. (c) 40 srs./ac. (d) Row to row 1′. (e) N.A. (v) Nil. (vi) NP—798. (vii) Nil. (viii) 2 Weedings. (ix) N.A. (ix) 11.4.1956.

2. TREATMENTS :

Same as in expt. no. 55(106) on page 243.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 16′×68′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Grain and straw yield. (iv) (a) to (c) No. (v) (a) Pusa, Sabour and Kanke. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 319 lb./ac. (ii) 13.0 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	270	427	329	268	265	355

S.E./mean = 6.5 lb./ac.

Crop :- Wheat ***(Rabi).*** **Ref :- Bh. 55(250).**

Site :- Govt. Agri. Farm, Siris. **Type :- 'M'.**

Object :—To find out the best time and method of applying G.M. to Wheat crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) Nil. (ii) (a) Clayey. (b) N.A. (iii) 27.11.1955. (iv) (a) 4 ploughings. (b) Behind the plough. (c) 40 srs./ac. (d) Row to row 1′. (e) N.A. (v) Nil. (vi) NP—798. (vii) and (viii) Nil. (ix) N.A. (x) 15.3.1956.

2. TREATMENTS :

Same as in expt. no. 56(90) on page 259.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 16′×68′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Grain and straw yield. (iv) (a) to (c) No. (v) (a) Chianki. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 654 lb./ac. (ii) 22.9 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_1	T_2	T_3	T_4
Av. yield	525	643	762	685

S.E./mean = 9.3 lb./ac.

Crop :- Wheat ***(Rabi).*** **Ref :- Bh. 57(251).**

Site :- Govt. Agri. Farm, Siris. **Type :- 'M'.**

Object :—To find the best method of applying fertilizers to Wheat crop.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Clayey. (b) N.A. (ii) 18.11.1957. (iv) (a) 4 ploughings. (b) Behind the plough. (c) 40 srs./ac. (d) Row to row 1′. (e) N.A. (v) Nil. (vi) NP—798. (vii) Irrigated. (viii) 1 weeding. (ix) N.A. (x) 5.3.1958.

2. TREATMENTS :

Same as in expt. no. 57(153) on page 274.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 8. (iv) (a) N.A. (b) 40′×27′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1957—1958. (b) No. (c) Nil. (v) (a) Banka Bikramganj, Kanke and Sabour. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1042 lb./ac. (ii) 26.9 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain n lb./ac.

Treatment	M_1	M_2	M_3
Av. yield	968	996	1162

S.E./mean = 9 5 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 58(305).**

Site :- Govt. Agri. Farm, Siris. **Type :- 'M'.**

Object :—To find the best method of applying fertilizers to Wheat crop.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Clayey. (b) N.A. (iii) 15.11.58. (iv) (a) 4 ploughings. (b) Behind the plough. (c) 40 srs./ac. (d) Row to row 1′. (e) N.A. (v) Nil. (vi) NP—798. (vii) Irrigated. (viii) Weeding twice. (ix) N.A. (x) 5.4.1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 57(153) on page 274.

5. RESULTS :

(i) 820 lb./ac. (ii) 91.6 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb /ac.

Treatment	M_1	M_2	M_3
Av. yield	830	1023	608

S.E./mean = 32.4 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 54(TCM).**

Centre :- Pusa. (c.f.) **Type :- 'M'.**

Object :—Type I :—To study the effect of types and levels of N on Wheat.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Grey and brown soils of Indo-Gangetic basin. (iii) N.A. (iv) Nov. 1954. (v) and (vi) N.A. (vii) Unirrigated. (viii) and (ix) N.A. (x) March 1955.

2. TREATMENTS :

0 =Control.
n_1 =20 lb./ac. of N as A/S.
n_2 =40 lb./ac. of N as A/S.
n_1'=20 lb./ac. of N as Urea.
n_2'=40 lb./ac. of N as Urea.

3. DESIGN :

(i) and (ii) Eleven community project centres representing the entire wheat growing tract of the country were selected. From each community project centre, one development block was selected. Villages were selected at random from the selected block and a list of cultivators growing wheat for each selected village was prepared. From this list, two cultivators were selected at random and one field each belonging to them was taken for trial. In each selected field an unreplicated trial was laid out. (iii) N.A. (iv) Yes.

4. GENERAL :

(i) Normal. (ii) No. (iii) Yield of grain. (iv) 1953—1954. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

Treatment	o	n_1	n_2	n_1'	n_2'
Av. yield in lb./ac.	707.6	831.1	995.7	839.3	1036.8

G.M. = 882.1 lb./ac., S.E./mean = 37.85 lb./ac. and no. of trials = 18.

Crop :- Wheat *(Rabi)*. **Ref :- 54 (TCM)**

Centre :- Pusa (c.f.). **Type :- 'M'.**

Object :—Type II—To study the effect of different levels and types of N and P on Wheat.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Grey and brown soils of Indo-Gangetic basin. (iii) N.A. (iv) Nov. 1954. (v) and (vi) N.A. (vii) Unirrigated. (viii) and (ix) N.A. (x) April 1955.

2. TREATMENTS :

0 =Control.
p =Super at 20 lb./ac. of P_2O_5.
n_1p =A/S at 20 lb./ac. of N+20 lb./ac. of P_2O_5 as Super.
n_2p =A/S at 40 lb./ac. of N+20 lb./ac. of P_2O_5 as Super.
$n_1'p$ =Urea at 20 lb./ac. of N+20 lb./ac. of P_2O_5 as Super.
$n_2'p$ =Urea at 40 lb./ac. of N+20 lb./ac. of P_2O_5 as Super.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 54 (TCM) type I on page 288 conducted at Pusa.

5. RESULTS :

Treatment	0	p	n_1p	n_2p	$n_1'p$	$n_2'p$
Av. yield	715.9	946.3	1020.3	1053.5	879.2	1094.4

G.M. = 957.6 lb./ac. ; S.E./mean = 64.18 lb./ac. and no. of trials = 9.

Crop :- Wheat *(Rabi)*. **Ref :- 54(TCM).**
Centre :- Pusa (c.f.). **Type :- 'M'.**

Object—Type IV—To study the effect of N, P and K on Wheat.

1. BASAL CONDITIONS :

Same as in expt. no. 54(TCM) type I on page 288 conducted at Pusa.

2. TREATMENTS :

0 =Control.
n_1 =20 lb./ac. of N as A/S.
n_1p_1 =20 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super.
n_1p_2 =20 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super.
$n_1p_1k_1$=20 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super+20 lb./ac. of K_2O as Pot. Sul.
$n_1p_1k_2$ = 20 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super+40 lb./ac. of K_2O as Pot. Sul.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 54(TCM) type I on page 288 conducted at Pusa.

5. RESULTS :

Treatment	0	n_1	n_1p_1	n_1p_2	$n_1p_1k_1$	$n_1p_1k_2$
Av. yield	913	1168	1185	1284	1251	1358

G.M. = 1193 lb./ac. S.E./mean = 49.37 lb./ac. and no. of trials = 15.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 58(SFT).**

Centre :- Bhagalpur (c.f.). **Type :- 'M'.**

Object :—Type A—To study the response of Wheat to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Alluvial. (iii) Nil. (iv) Local. (v) (a) 3 to 9 ploughings. (b) Line sowing and broadcasting (c) and (d) N.A. (e)—. (vi) November-December, 1958. (vii) Irrigaied. (viii) and (ix) N.A. (x) March-April, 1959.

2. TREATMENTS :

0 =Control.
n =20 lb./ac. of N as A/S.
p =20 lb./ac. of P_2O_5 as Super.
np =20 lb./ac. of of N as A/S+20 lb./ac. of P_2O_5 as Super.
k =20 lb./ac. of K_2O as Mur. Pot.
nk =20 lb./ac. of N as A/S+20 lb./ac. of K_2O as Mur. Pot.
pk =20 lb./ac. of P_2O_5 as Super+20 lb./ac. of K_2O as Mur. Pot.
npk =20 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super+20 lb./ac. of K_2O as Mur. Pot.

3. DESIGN :

(i) and (ii) The district has been divided into four agriculturally homogeneous zones and one field assistant posted in each zone. The field assistant conducts the trials in one Revenue circle or thana in the zone and the circle/thana is changed once in two years within the same zone. Each field assistant is required to conduct 31 trials in a year, 8 on *kharif* cereal, 8 on a *rabi* cereal, 8 on cash crops, 4 on an oilseed crop and 3 on a leguminous crop. Half the number of trials conducted are of type A and the other half of type B on crops other than the legumes. The three trials on legumes are of Type C. Residual effects of phosphate application are studied on type C trials in two out of the four zones in each district every year. The above experiments are laid out in randomly located fields in randomly selected villages in each of the 4 zones at the rate of one experiment per village. (iii) (a) Varies from 1/20 ac. to 1/40 ac. (b) 1/80 ac. (iv) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain yield. (iv) (a) 1958—contd. (b) No. (c) Nil. (v) (a) and (b) As per design. (vi) and (vii) Nil.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	247	156	49	24.7	16	16	33	—8	9.1

Control yield = 773 lb./ac. and no of trials = 14.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 59(SFT).**

Centre :- Bhagalpur (c.f.). **Type :- 'M'.**

Object :—Type A—To study the response of Wheat to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Alluvial. (iii) Nil. (iv) Local. (v) (a) 3 to 9 ploughings. (b) Line sowing and broadcasting. (c) and (d) N.A. (e) —. (vi) November—December 1959. (vii) As per results below. (viii) N.A. (ix) N.A. (x) March—April 1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type A on page 289 conducted at Bhagalpur.

5. RESULTS :

Irrigated

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	444	206	49	23.9	82	33	0	33	19.7

Control mean = 642 lb./ac. and no. of trials = 6.

Unirrigated

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	239	115	58	24.7	58	0	16	25	31.3

Control mean = 576 lb./ac. and no. of trials = 10.

Crop :- Wheat *(Rabi).* **Ref :- Bh. 58(SFT).**

Centre :- Champaran (c.f.). **Type :- 'M'.**

Object :—Type A—To study the response of Wheat to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Alluvial. (iii) Nil. (iv) Local. (v) (a) 7 to 8 ploughings and 2 to 8 plankings. (b) Line sowing and broadcasting. (c) and (d) N.A. (e)—. (vi) November, 1958. (vii) Unirrigated. (viii) and (ix) N.A. (x) April, 1959.

2. TREATMENTS to 4. GENERAL :

Same as expt. no. 58(SFT) type A on page 289 conducted at Bhagalpur.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	263	99	33	31.3	16	8	66	41	22.2

Control mean = 634 lb./ac. and no. of trials = 14.

Crop :- Wheat *(Rabi).* **Ref :- Bh. 59(SFT).**

Centre :- Champaran (c.f.). **Type :- 'M'.**

Object :—Type A—To study the response of Wheat to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Alluvial. (iii) Nil. (iv) Local. (v) (a) 7 to 8 ploughings and 2 to 8 plankings. (b) Line sowing and broadcasting. (c) and (d) N.A. (e)—. (vi) November, 1959. (vii) Unirrigated. (viii) and (ix) N.A. (x) April, 1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type A on page 289 conducted at Bhagalpur.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	165	41	74	32.9	8	—33	49	74	32.9

Control mean = 724 lb./ac. and no. of trials = 15.

Crop :- Wheat *(Rabi).* **Ref :- Bh. 58(SFT).**

Centre :- Gaya (c.f.). **Type :- 'M'.**

Object :—Type A—To study the response of Wheat to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Alluvial. (iii) Nil. (iv) Local. (v) (a) 4 to 6 ploughings and 2 plankings. (b) to (e) N.A. (vi) November—December, 1958. (vii) Irrigated. (viii) and (ix) N.A. (x) March—April 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type A on page 289 conducted at Bhagalpur.

RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	197	148	16	32.1	8	—8	16	16	10.7

Control mean = 938 lb./ac. and no. of trials = 14.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 59(SFT).**

Centre :- Gaya (c.f.). **Type :- 'M'.**

Object :—Type A—To study the response of Wheat to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Alluvial. (iii) Nil. (iv) Local. (v) (a) 4 to 6 ploughings and plankings. (b) to (e) N.A. (vi) November—December, 1959. (vii) Irrigated. (viii) and (ix) N.A. (x) March—April, 1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type A on page 289 conducted at Bhagalpur.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	288	156	115	21.4	58	25	41	33	15.6

Control mean = 922 lb./ac. and no. of trials = 16.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 58(SFT)**

Centre :- Hazaribagh (c.f.). **Type :- 'M'.**

Object :—Type A—To study the response of Wheat to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Red. (iii) Nil. (iv) Local. (v) (a) 3 to 6 ploughings. (b) Broadcasting and line sowing. (c) and (d) N.A. (e) —. (vi) November—December, 1958. (vii) Irrigated. (viii) and (ix) N.A. (x) March, 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type A on page 298 conducted at Bhagalpur.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	313	263	181	44.4	132	82	82	58	25.5

Control mean = 831 lb./ac. and no. of trials = 12.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 59(SFT).**

Centre :- Hazaribagh (c.f.). **Type :- 'M'.**

Object :—Type A—To study the response of Wheat to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Red. (iii) Nil. (iv) Local. (v) (a) 3 to 6 ploughings. (b) Broadcasting and line sowing. (c) and (d) N.A. (e) —. (vi) November-December, 1959. (vii) Irrigated. (viii) and (ix) N.A. (x) March, 1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) Type A on page 289 conducted at Bhagalpur.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	650	543	338	16.5	41	123	156	66	17.3

Control mean = 1004 lb./ac. and no. of trials = 8.

Crop :- Wheat *(Rabi).* **Ref :- Bh. 58(SFT).**

Centre :- Monghyr (c.f.). **Type :- 'M'.**

Object :—Type A—To study the response of Wheat to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Alluvial. (iii) Nil. (iv) Local (v) (a) 1 to 6 ploughings. (b) to (e) N.A. (vi) November, 1958. (vii) As per treatments. (viii) and (ix) N.A. (x) March-April, 1959.

2. TREATMENT to 4. GENERAL :

Same as in expt. no. 58(SFT) type A on page 289 conducted at Bhagalpur.

5. RESULTS :

Irrigated

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	296	206	33	95.5	74	66	91	41	26.3

Control yield = 1053 lb./ac. and no. of trials = 7.

Unirrigated

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	288	173	82	13.2	66	25	123	—25	11.5

Control yield = 560 lb./ac. and no. of trials = 5.

Crop :- Wheat *(Rabi).* **Ref :- Bh. 59(SFT).**

Centre :- Monghyr (c.f.). **Type :- 'M'.**

Object :—Type A—To study the response of Wheat to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Alluvial. (iii) Nil. (iv) Local. (v) (a) 1 to 6 ploughings. (b) to (e) N.A. (vi) November, 1959. (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) March-April, 1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type A on page 289 conducted at Bhagalpur.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	280	148	25	20.6	8	—25	—8	41	18.9

Control mean = 749 lb /ac. and no. of trials = 12.

Crop :- Wheat *(Rabi).* **Ref :- Bh.58(SFT).**

Centre :- Muzaffarpur (c.f.). **Type :- 'M'.**

Object :—Type A—To study the response of Wheat to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Alluvial. (iii) Nil. (iv) Local. (v) (a) 6 to 8 ploughings and 4 to 6 plankings. (b) Line sowing. (c) and (d) N.A. (e)—. (vi) November, 1958. (vii) As per results below. (viii) N.A. (ix) N.A. (x) March, 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type A on page 289 conducted at Bhagalpur.

5. RESULTS :

Irrigated

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	296	288	25	22.2	—91	25	—16	33	123.4

Control mean = 1020 lb./ac. and no. of trials = 6.

Unirrigated

Effect	n	P	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	148	123	156	37.0	0	16	—8	58	27.2

Control mean = 1012 lb./ac. and no. of trials = 10.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 59(SFT).**

Centre :- Muzaffarpur (c.f.). **Type :- 'M'.**

Object :—Type A—To study the response of Wheat to levels of N, P and K applied individually and combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Alluvial. (iii) Nil. (iv) Local. (v) (a) 6 to 8 ploughings and 4 to 6 planking. (b) (b) Line sowing. (c) and (d) N.A. (e) —. (vi) November, 1959. (vii) Unirrigated. (viii) N.A. (ix) N.A. (x) March, 1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) on page 289 conducted at Bhagalpur.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	181	140	66	25.5	25	41	8	8	32.1

Control mean = 683 lb./ac. and no. of trials = 12.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 58(SFT).**

Centre :- Patna (c.f.). **Type - 'M'.**

Object :—Type A—To study the response of Wheat to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Other alluvial. (iii) Nil. (iv) Local. (v) (a) 6 to 8 ploughings and 1 to 4 plankings. (b) to (e) N.A. (vi) November—December, 1958. (vii) Irrigated. (viii) 2 weedings. (ix) N.A. (x) Feburary—March, 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type A on page 289 conducted at Bhagalpur.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	304	263	197	24.7	25	25	66	66	17.3

Control yield = 1103 lb./ac. and no. of trials = 15.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 59(SFT).**

Centre :- Patna (c.f.). **Type :-'M'.**

Object :—Type A —To study the response of Wheat to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONTS :

(i) (a) to (c) Nil. (ii) Other alluvial. (iii) Nil. (iv) Local. (v) (a) 6 to 8 ploughings and 1 to 4 plankings. (b) to (e) N A. (vi) November—December, 1959. (vii) Irrigated. (viii) Weedings. (ix) N.A. (x) February—March, 1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type A on page 289 conducted at Bhagalpur.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	354	206	165	11.5	41	16	8	—8	10.7

Control mean = 1144 lb./ac. and no. of trials = 15.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 58(SFT).**

Centre :- Purnea (c.f.). **Type :- 'M'.**

Object :—Type A—To study the response of Wheat to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Other alluvial. (iii) Nil. (iv) Local. (v) (a) 4 to 6 ploughings. (b) to (e) N.A. (vi) November—December, 1958. (vii) Unrirrigated. (viii) N.A. (ix) N.A. (x) March—April, 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type A on page 289 conducted at Bhagalpur.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	66	99	66	4.9	25	—8	0	—16	4.1

Control mean = 699 lb./ac. and no. of trials = 12.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 59(SFT).**

Centre :- Purnea (c.f.). **Type :- 'M'.**

Object :—Type A—To study the response of Wheat to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Other alluvial. (iii) Nil. (iv) Local. (v) (a) 4 to 6 ploughings. (b) to (e) N.A. (vi) November—December, 1959. (vii) Unirrigated. (viii) and (ix) N.A. (x) March—April, 1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type A on page 289 conducted at Bhagalpur.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	123	99	66	19.7	8	—16	41	16	17.3

Control mean = 592 lb./ac. and no. of trials = 14.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 58(SFT).**

Centre :- Ranchi (c.f.). **Type :- 'M'.**

Object :—Type A—To study the response of Wheat to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Red soil. (iii) Nil. (iv) Local. (v) (a) 3 to 6 ploughings and 3 to 4 plankings. (b) Line sowing and broadcasting. (c) to (e) N.A. (vi) December, 1958. (vii) As per results below. (viii) and (ix) N.A. (x) March—April, 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type A on page 289 conducted at Bhagalpur.

5. RESULTS :

Irrigated

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	321	206	8	32.9	74	33	49	41	32.9

Control mean = 650 lb./ac. and no. of trials = 7

Unirrigated

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	469	288	189	62.5	8	—41	16	91	46.9

Control mean = 667 lb./ac. and no. of trials = 4

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 59(SFT).**

Centre :- Ranchi (c.f.). **Type :- 'M'.**

Object :—Type A—To study the response of Wheat to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Red soil. (iii) Nil. (iv) Local. (v) (a) 3 to 6 ploughings and 3 to 4 plankings. (b) Line sowing and broadcasting. (c) to (e) N.A. (vi) December, 1959. (vii) Irrigated. (viii) and (ix) N.A. (x) March—April, 1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type A on page 289 conducted at Bhagalpur.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	214	99	41	32.1	25	—16	66	49	25.5

Control mean = 535 lb./ac. and no. of trials = 11.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 58(SFT).**

Centre :- Santhal Paraganas (c.f.). **Type :- 'M'.**

Object :—Type A—To study the response of Wheat to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil (ii) Red soil. (iii) Nil. (iv) Local. (v) (a) 5 to 8 ploughings and 2 plankings. (b) (b) Broadcasting. (c) to (e) N.A. (vi) December, 1958. (vii) Irrigated. (viii) and (ix) N.A. (x) March—April, 1959.

2. TREATMENTS to 4. GENERAL

Same as in expt. no. 58(SFT) type A on page 289 conducted at Bhagalpur.

5. RESULTS :

Effect	n	p	k	S.E.	np	pk	nk	npk	S.E.
Av. response in lb./ac.	181	165	58	28.8	—25	—16	8	91	18.1

Control mean = 1563 lb./ac. and no. of trials = 15.

Crop :- Wheat ***(Rabi).*** **Ref :- Bh. 59(SFT).**

Centre :- Santhal Paraganas (c.f.). **Type :- 'M'.**

Object :—Type A—To study the response of Wheat to levels of N, P and K applied indvidually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Red soil. (iii) Nil. (iv) Local. (v) (a) 5 to 8 ploughings and 2 plankings. (b) Broadcast. (c) to (e) N.A. (vi) December, 1959. (vii) As per results below. (viii) and (ix) N.A. (x) March—April, 1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) on page 289 conducted at Bhagalpur.

5. RESULTS :

Irrigated

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	304	132	99	16.5	—8	—16	0	41	11.5

Control mean = 1424 lb./ac. and no. of trials = 10 .

Unirrigated

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	304	156	99	48.5	16	—66	—25	0	27.2

Control mean = 1465 lb./ac. and no. of trials = 6.

Crop :- Wheat ***(Rabi).*** **Ref :- Bh. 58(SFT).**

Central :- Shahabad (c.f.). **Type :- 'M'.**

Object :—Type A—To study the response of Wheat to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Alluvial. (iii) Nil. (iv) Local. (v) (a) 4 to 6 ploughings and 2 to 4 plankings. (b) to (e) N.A. (vi) November—December, 1958. (vii) Irrigated. (viii) and (ix) N.A. (x) March—April, 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type A on page 289 conducted at Bhagalpur.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	272	288	222	35.4	—8	33	8	—8	23.0

Control mean = 765 lb./ac. and no. of trials = 11.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 59(SFT).**

Centre :- Shahabad (c.f.). **Type :- 'M'.**

Object :—Type A—To study the response of Wheat to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Alluvial. (iii) Nil. (iv) Local. (v) (a) 4 to 6 ploughings and 2 to 4 plankings. (b) to (e) N.A. (vi) November—December, 1959. (vii) Irrigated. (viii) and (ix) N.A. (x) March—April, 1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type A on page 289 conducted at Bhagalpur.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	379	329	321	33.7	0	—25	74	—56	30.4

Control mean = 1127 lb./ac. and no. of trials = 13.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 58(SFT).**

Centre :- Bhagalpur (c.f.). **Type :- 'M'.**

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS:

(i) (a) to (c) Nil. (ii) Alluvial. (ii) Nil. (iv) Local. (v) (a) 3 to 8 ploughings 3 plankings and one rolling. (b) Broadcasting and line sowing. (c) and (d) N.A. (e) —. (vi) November 1958 and January 1959. (vii) Irrigated. (viii) 1 weeding. (ix) N.A. (x) March and April, 1959.

2. TREATMENTS :

0 =Control (no manure).
n_1' =20 lb./ac. of N as Urea.
n_2' =40 lb./ac. of N as Urea.
n_1'' =20 lb./ac. of N as A/S/N.
n_2'' =40 lb./ac. of N as A/S/N.
n_1''' =20 lb./ac. of N as C/A/N.
n_2''' =40 lb./ac. of N as C/A/N.

3. DESIGN :

(i) and (ii) The district has been divided into four agriculturally homogeneous zones and one field assistant posted in each zone. The field assistant conducts the trials in one Revenue circle or thana in the zone and the circle/thana is changed once in two years within the same zone. Each field assistant is required to conduct 31 trials in a year, 8 on *kharif* cereal, 8 on a *rabi* cereal, 8 on cash crops, 4 on an oilseed crop and 3 on a leguminous crop. Half the number of trials conducted are of type A and the other half of type B on crops other than the legumes. The three trials on legumes are of type C. Residual effects of phosphate application are studied on type C trials in two out of the four zones in each district every year. The above experiments are laid out in randomly located fields in randomly selected villages in each of the 4 zones at the rate of one experiment per village. (iii) (a) Varies from 1/20 to 1/40 ac. (b) 1/80 ac. (iv) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain yield. (iv) (a) 1958—contd. (b) No. (c) N.A. (v) As per design. (vi) and (vii) Nil.

5. RESULTS.

Treatment	0	n_1'	n_2'	n_1''	n_2''	n_1'''	n_2'''
Av. yield	963	1160	1275	1020	1341	1243	1037

G.M. = 1148 lb./ac.; S.E. = 72.15 lb./ac. and no. of trials = 4.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 58(SFT).**

Centre :- Bhagalpur (c.f.). **Type :- 'M'.**

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizere at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Alluvial (iii) Nil. (iv) Local. (v) (a) 3 to 8 ploughings and 3 plankings on rolling. (b) Broadcasting and line sowings. (c) and (d) N.A. (e) —. (vi) November 1958 and January 1959. (vii) Unirrigated. (viii) 1 weeding. (ix) N.A. (x) March and April 1959.

2. TREATMENTS :

0 =Control (no manure).
n_1' =20 lb./ac. of N as Urea.
n_2' =40 lb./ac. of N as Urea.
n_1'' =20 lb./ac. of N as A/S/N.
n_2'' =40 lb./ac. of N as A/S/N.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 58(SFT) type B on page 298 conducted at Bhagalpur.

5. RESULTS :

Treatment	0	n_1'	n_2'	n_1''	n_2''
Av. yield	633.6	921.6	1135.5	666.5	814.6

G.M. = 834.4 lb./ac. ; S.E. = 36.07 lb./ac. and no. of trials = 4.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 59(SFT).**

Centre :- Bhagalpur. **Type :- 'M'.**

Object :—Type B —To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Alluvial. (iii) Nil. (iv) Local. (v) (a) 3 to 8 ploughings and 3 plankings on rolling. (b) Broadcasting and line sowing. (c) and (d) N.A. (e) —. (vi) November 1959 and January 1960. (vii) As per results below. (viii) 1 weeding. (ix) N.A. (x) March and April 1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type B on page 298 conducted at Bhagalpur.

5. RESULTS :

Irrigated

Treatment	n	n_1'	n_2'	n_1''	n_2''	n_1'''	n_2'''
Av. yield	535	749	1037	650	790	625	741

G.M. = 732 lb./ac. S.E./mean = 44.8 lb./ac. and no. of trials = 6.

Unirrigated

Treatment	0	n_1'	n_2'	n_1''	n_2''	n_1'''	n_2'''
Av. yield	642	905	1094	757	889	757	996

G.M. = 863 lb./ac. ; S.E. = 27.3 lb./ac. and no. of trials = 8.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 58(SFT).**

Centre :- Champaran (c.f.). **Type :- 'M'.**

Object :—Type B —To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Alluvial. (iii) Nil. (iv) Local. (v) (a) 7 to 9 ploughings and plankings. (b) Line sowing. (c) and (d) N.A. (e) —. (vi) November—December 1958. (vii) Unirrigated. (viii) 1 weeding. (ix) N.A. (x) March—April 1959.

2. TREATMENTS :

Same as in expt. no. 58(SFT) type B on page 299 conducted at Bhagalpur.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 58(SFT) type B on page 298 conducted at Bhagalpur.

5. RESULTS :

Treatment	0	n_1'	n_2'	n_1''	n_2''
Av. yield	460.8	847.5	1086.2	814.6	929.8

G.M. = 827.8 lb./ac. S.E. = 62.26 lb./ac. and no. of trials = 12.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 59(SFT).**

Centre :- Champaran (c.f.). **Type :- 'M'.**

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Alluvial. (iii) Nil. (iv) Local. (v) (a) 7 to 9 ploughings and plankings. (b) Line sowing. (c) and (d) N.A. (e) —. (vi) November-December 1959. (vii) Unirrigated. (viii) 1 weeding. (ix) N.A. (x) March-April 1960.

2. TREATMETS to 4. GENERAL :

Same as in expt. no. 58(SFT) type B on page 298 conducted at Bhagalpur.

5. RESULTS :

Treatment	n_0	n_1'	n_2'	n_1''	n_2''	n_1'''	n_2'''
Av. yield	691	1119	1349	1152	1160	930	1094
		(4)	(4)	(8)	(8)		

G.M. = 1071 lb./ac., S.E. = 86.7 lb./ac. and no. of trials = 15.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 58(SFT).**

Centre :- Gaya (c.f.). **Type :- 'M'.**

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil (ii) Alluvial. (iii) Nil. (iv) Local. (v) (a) 4 to 6 ploughings and 1 to 2 plankings. (b) Line sowing. (c) and (d) N.A. (e) —. (vi) November—December 1958. (vii) Irrigated. (viii) Weeding. (ix) N.A. (x) April 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type B on page 298 conducted at Bhagalpur.

5. RESULTS :

Treatment	0	n_1'	n_2'	n_1''	n_2''	n_1'''	n_2'''
Av. yield	979	1168	1234	1144	1193	1086	1127

G.M. = 1133 lb./ac., S.E. = 17.28 lb./ac. and no. of trials = 11.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 59(SFT).**

Centre :- Gaya (c.f.). **Type :- 'M'.**

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Alluvial. (iii) Nil. (iv) Local. (v) (a) 4 to 6 ploughings and 1 to 2 plankings. (b) Line sowing. (c) and (d) N.A. (e) —. (vi) November-December 1959. (vii) Irrigated. (viii) 1 weeding. (ix) N.A. (x) April 1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type B on page 298 conducted at Bhagalpur.

5. RESULTS :

Treatment	0	n_1'	n_2'	n_1''	n_2''	n_1'''	n_2'''
Av. yield	839	1127	1432	1168	1358	1078	1284

G.M. = 1184 lb./ac., S.E. = 48.3 lb./ac. and no. of trials = 16.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 58(SFT).**

Centre :- Hazaribagh (c.f.). **Type :- 'M'.**

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Red soil. (iii) Nil. (iv) Local. (v) (a) 5 to 8 ploughings and 4 planking. (b) Line sowing and broadcasting. (c) and (d) N.A. (e) —. (vi) November, 1958. (vii) Irrigated. (viii) and (ix) N.A. (x) March, 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type B on page 298 conducted at Bhagalpur.

5. RESULTS :

Treatment	0	n_1'	n_2'	n_1''	n_2''	n_1'''	n_2'''
Av. yield	634	1308	1695	708	913	1020	1243

G.M. = 1074 lb./ac., S.E. = 50.04 lb./ac. and no. of trials = 4.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 59(SFT).**

Centre :- Hazaribagh (c.f.). **Type :- 'M'.**

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Red soil. (iii) Nil. (iv) Local. (v) (a) 5 to 8 ploughings and 4 plankings. (b) Line sowing and broadcasting. (c) and (d) N.A. (e) —. (vi) November, 1959. (vii) Irrigated. (viii) and (ix) N.A. (x) March, 1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type B on page 298 conducted at Bhagalpur.

5. RESULTS :

Treatment	0	n_1'	n_2'	n_1''	n_2''	n_1'''	n_2'''
Av. yield	1300	2000	2526	2122	2164	1942	2650

G.M. = 2101 lb./ac. ; S.E. = 89.6 lb./ac. and no. of trials = 5.

Crop :- Wheat *(Rabi).* **Ref :- Bh. 58(SFT).**

Centre :- Monghyr (c.f.). **Type :- 'M'.**

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) —. (iii) Nil. (iv) Local. (v) (a) 4 to 8 ploughings and 3 to 5 plankings. (b) to (e) N.A. (vi) November—December, 1958. (vii) Unirrigated. (viii) Weeding. (ix) N.A. (x) April, 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type B on page 298 conducted at Bhagalpur.

5. RESULT

Treatmeat	0	n_1'	n_2'	n_1''	n_2''	n_1'''	n_2'''
Av. yield	543.1	880.5	888.7	929.8	798.2	773.5	831.1

G.M. = 806.4 lb./ac. ; S.E. = 20.36 lb./ac. and no. of trials = 10.

Crop :- Wheat *(Rabi).* **Ref :- Bh. 59(SFT).**

Centre :- Monghyr (c.f.). **Type :- 'M'.**

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) —. (iii) Nil. (iv) Local. (v) (a) 4 to 8 ploughings and 3 to 5 plankings (b) to (e) N.A. (vi) November—December, 1959. (vii) Unirrigated. (viii) Weeding. (ix) N.A. (x) April, 1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type B on page 298 conducted at Bhagalpur.

5. RESULTS :

Treatment	0	n_1'	n_2'	n_1''	n_2''	n_1'''	n_2'''
Av. yield	518	683	848	691	823	675	897

G.M. = 734 lb./ac. ; S.E. = 34.3 lb./ac. and no. of trials = 12.

Crop :- Wheat *(Rabi).* **Ref :- Bh. 58(SFT).**

Centre :- Muzaffarpur (c.f.). **Type :- 'M'.**

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Alluvial. (iii) Nil. (iv) Local. (v) (a) 4 to 6 ploughings, plankings and 3 harrowings. (b) to (e) N.A. (vi) November and December, 1958. (vii) Irrigated. (viii) 1 to 2 weedings. (ix) N.A. (x) March 1959.

2. TREATMENTS :

0 =Control (no manure).
n_1' =20 lb./ac. of N as Urea.
n_2' =40 lb./ac. of N as Urea.
n_1'''=20 lb /ac. of N as C/A/N.
n_2'''=40 lb./ac. of N as C/A/N.

3. DESIGN to 4. GENERAL :

Same as in expt. no. 58(SFT) type B on page 298 conducted at Bhagalpur.

5. RESULTS :

Treatment	0	n_1'	n_2'	n_1'''	n_2'''
Av. yield	773	1498	1703	1308	1415

G.M. = 1339 lb./ac. ; S.E. = 43.64 lb./ac. and no. of trials = 4.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 58(SFT).**

Centre :- Muzaffarpur (c.f.). **Type :- 'M'.**

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Alluvial. (iii) Nil. (iv) Local. (v) (a) 4 to 6 ploughings, plankings and 3 harrowings. (b) to (e) N.A. (vi) November and December, 1958. (vii) Unirrigated. (viii) 1 to 2 weedings. (ix) N A. (x) March, 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type B on page 298 conducted at Bhagalpur.

5. RESULTS :

Treatment	0	n_1'	n_2'	n_1''	n_2''	n_1'''	n_2'''
Av. yield	864	1160	1300	963	1004	1341	1481

G.M. = 1159 lb./ac. ; S.E. = 68.66 lb./ac. and no. of trials = 7.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 59(SFT).**

Centre :- Muzaffarpur (c.f.). **Type :- 'M'.**

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Alluvial. (iii) Nil. (iv) Local. (v) (a) 4 to 6 ploughings, 4 plankings and 3 harrowings. (b) Line sowing and broadcasting. (c) to (e) N.A. (vi) November and December, 1959. (vii) As per results. (viii) 1 to 2 weedings. (ix) N.A. (x) March, 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type B on page 298 conducted at Bhagalpur.

5. RESULTS ;

Irrigated

Treatment	0	n_1'	n_2'	n_1''	n_2''	n_1'''	n_2'''
Av. yield	716	1391	1662	1259	1382	1292	1489

G.M. = 1313 lb./ac. ; S.E. = 38.4 lb./ac. and no. of trials = 4.

Unirrigated

Treatment	0	n_1'	n_2'	n_1''	n_2''	n_1'''	n_2'''
Av. yield	609	823	946	798	872	773	955

G.M. = 825 lb./ac. ; S.E. = 52.4 lb./ac. and no. of trials = 12.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 58(SFT).**

Centre :- Patna (c.f.). Type :- 'M'.

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Other alluvial. (iii) Nil. (iv) Local. (v) (a) 4 to 7 ploughings and 2 to 5 plankings. (b) to (e) N.A. (vi) December, 1958. (vii) Unirrigated. (viii) and (ix) N.A. (x) March-April, 1959.

2. TREATMENTS to 4. GENERAL :
Same as in expt. no. 58(SFT) type B on page 298 conducted at Bhagalpur.

5. RESULTS :

Treatment	0	n_1'	n_2'	n_1''	n_2''	n_1'''	n_2'''
Av. yiled	782	1004	1415	1004	1473	1119	1152

G.M. = 1136 lb./ac. ; S.E. = 57.02 lb./ac. and no. of trials = 7.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 58(SFT).**

Centre :- Patna (c.f.). Type :- 'M'.

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Other alluvial. (iii) Nil. (iv) Local. (v) (a) 4 to 7 ploughings and 2 to 5 plankings. (b) to (e) N.A. (vi) December, 1958. (vii) Irrigated. (viii) and (ix) N.A. (x) March-April, 1959.

2. TREATMENTS :

Same as in expt. no. 58(SFT, type B on page 302 conducted at Muzaffarpur.

3. DESIGN to 4. GENERAL :

Same as in expt. no. 58(SFT) type B on page 298 conducted at Bhagalpur.

5. RESULTS :

Treatment	0	n_1'	n_2'	n_1'''	n_2'''
Av. yield	633.6	707.7	1069.7	724.1	872.2

G.M. = 801.5 lb./ac. ; S.E. = 48.88 lb./ac. and no. of trials = 4.

Crop :- Wheat *(Rabi)* **Ref :- Bh. 59(SFT).**

Centre :- Patna (c.f.). Type :- 'M'.

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Other alluvial. (iii) Nil. (iv) Local. (v) (a) 4 to 7 ploughings and 2 to 5 plankings. (b) to (e) N.A. (vi) December, 1959. (vii) Irrigated. (viii) and (ix) N.A. (x) March-April 1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type B on page 298 conducted at Bhagalpur.

5. RESULTS :

Treatment	0	n_1'	n_2'	n_1''	n_2''	n_1'''	n_2'''
Av. yield	1111	1662	1860	1415	1629	1465	1637

G.M. = 1540 lb./ac. ; S.E. = 46.5 lb./ac. and no. of trials = 11.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 58(SFT).**

Centre :- Purnea (c.f.). **Type :- 'M'.**

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Alluvial. (iii) Nil. (iv) Local. (v) 5 to 9 ploughings, 3 to 6 plantings. (b) to (e) N.A. (vi) November-December 1958. (vii) Unirrigated. (viii) 1 weeding. (ix) N.A. (x) April 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type B on page 298 conducted at Bhagalpur.

5. RESULTS :

Treatment	0	n_1'	n_2	n_1''	n_2''	n_1'''	n_2'''
Av. yield	872	880	996	938	897	864	946

G.M. = 913 lb./ac., S.E. = 26.8 lb./ac. and no. of trials = 8.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 59(SFT).**

Centre :- Purnea (c.f.). **Type :- 'M'.**

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Alluvial. (iii) Nil. (iv) Local. (v) (a) 5 to 9 ploughings, 3 to 6 plankings. (b) to (e) N.A. (vi) November—December 1959. (vii) Unirrigated. (viii) 1 weeding. (ix) N.A. (x) April 1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type B on page 298 conducted at Bhagalpur.

5. RESULTS :

Treatment	0	n_1'	n_2'	n_1''	n_2''	n_1'''	n_2'''
Av. yield	560	634	749	658	765	625	683

G.M. = 668 lb./ac., S.E. = 20.4 lb./ac. and no. of trials = 12.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 58(SFT).**

Centre :- Ranchi (c.f.). **Type :- 'M'.**

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Red soil. (iii) Nil. (iv) Local. (v) (a) 5 to 6 ploughings and 4 plankings. (b) to (e) N.A. (vi) December 1958. (vii) As per results. (viii) and (ix) N.A. (x) March-April 1959.

2. TREATMENTS :

Same as in expt. no. 58(SFT) type B on page 302 conducted at Muzaffarpur.

3. DESIGN and 4. GENERAL :

Same as in expt. no 58(SFT) type B on page 298 conducted at Bhagalpur.

5. RESULTS :

Irrigated

Treatment	0	n_1'	n_2'	n_1'''	n_2'''
Av. yield	872	1284	1761	1275	1736

G.M. = 1386 lb./ac., S.E. = 84.37 lb./ac. and no. of trials = 4.

Unirrigated

Treatment	0	n_1'	n_2'	n_1'''	n_2'''
Av. yield	922	1103	1094	979	1029

G.M. = 1025 lb./ac., S.E. = 44.22 lb./ac. and no. of trials = 2.

Crop :- Wheat (*Rabi*). **Ref :- Bh. 59(SFT).**

Centre :- Ranchi (c.f.). **Type :- 'M'.**

Object :—Type B —To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Red soil. (iii) Nil. (iv) Local. (v) (a) 5 to 6 ploughings and 4 plankings. (b) Broadcasting. (c) to (e) Nil. (vi) December 1959. (vii) Irrigated. (viii) 3 weedings. (ix) N.A. (x) March—April 1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type B on page 298 conducted at Bhagalpur.

5. RESULTS :

Treatment	0	n_1'	n'_2	n_1''	n_2''	n_1'''	n_2'''
Av. yield	642	716	790	913	1136	889	1029

G.M. = 874 lb./ac., S.E. = 43.6 lb./ac. and no. of trials = 8.

Crop :- Wheat (*Rabi*). **Ref :- Bh. 58(SFT).**

Centre :- Santhal Paraganas (c.f.). **Type :- 'M'.**

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Red soil. (iii) Nil. (iv) Local. (v) (a) 5 to 8 ploughings and 2 plankings. (b) Broadcasting. (c) to (e) N.A. (vi) December, 1958. (vii) Unirrigated. (viii) 2 weedings. (ix) N.A. (x) April, 1959.

2. TREATMENTS :

Same as in expt. no. 58(SFT) type B on page 302 conducted at Muzaffarpur.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 58(SFT) type B on page 298 conducted at Bhagalpur.

5. RESULTS :

Treatment	0	n_1'	n_2'	n_1'''	n_2'''
Av. yield	1004	1300	1424	1325	1374

G.M. = 1285 lb./ac., S.E. = 33.7 lb./ac. and no. of trials = 8.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 59(SFT).**

Centre :- Santhal Paraganas (c.f.). **Type :- 'M'.**

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red soil. (iii) Nil. (iv) Local. (v) (a) 5 to 8 ploughings and 2 plankings. (b) Broadcasting (c) to (e) N.A. (vi) December 1959. (vii) As per results. (viii) 2 weedings. (ix) N.A. (x) April 1960.

2. TREATMENTS to 4 GENERAL :

Same as in expt. no. 58(SFT) type B on page 298 conducted at Bhagalpur.

5. RESULTS :

Irrigated

Treatment	0	n_1'	n_2'	n_1''	n_2''	n_1'''	n_2'''
Av. yield	1349	1637	1851	1563	1744	1539	1720

G.M. = 1629 lb./ac. ; S.E. = 37.8 lb./ac. and no. of trials = 10.

Unirrigated

Treatment	0	n_1'	n_2'	n_1''	n_2''	n_1'''	n_2'''
Av. yield	1317	1670	2000	1613	1819	1975	1802

G.M. 1742 lb./ac. ; S.E. = 30.3 lb./ac. and no. of trials = 6.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 58(SFT).**

Centre :- Shahabad (c.f.). **Type :- 'M'.**

Object :—Type B :—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Alluvial. (iii) Nil. (iv) Local. (v) (a) 5 to 6 ploughings. (b) to (e) N.A. (vi) November—December 1958. (viii) Unirrigated. (viii) and (ix) N.A. (x) March—April 1959.

2. TREATMENTS :

Same as in expt. no. 58(SFT) Type B on page 299 conducted at Bhagalpur.

3. DESIGN and 4 GENERAL :

Same as in expt. no. 58(SFT) type B on page 298 conducted at Bhagalpur.

5. RESULTS :

Treatment	0	n_1	n_2'	n_1''	n_2''
Av. yield	642	1275	1489	1267	1415

G.M. = 1218 lb./ac. ; S.E. = 44.2 lb./ac. and no. of trials = 4.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 58(SFT).**

Centre :- Shahabad (c.f.). **Type :- 'M'.**

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Alluvial. (iii) Nil. (iv) Local. (v) (a) 5 to 6 ploughings. (b) to (e) N.A. (vi) November-December 1958. (vii) Irrigated. (viii) and (ix) N.A. (x) March-April 1959.

2. TREATMENTS :

Same as in expt. no. 58(SFT) type B on page 302 conducted at Muzaffarpur.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 58(SFT) type B on page 298 conducted at Bhagalpur.

5. RESULTS:

Treatment	0	n_1'	n_2'	n_1'''	n_2'''
Av. yield	1193	1440	1646	1308	1473

G.M. = 1412 lb./ac., S.E. = 68.1 lb./ac. and no. of trials = 4.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 59(SFT).**

Centre :- Shahabad (c.f.). **Type :- 'M'.**

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Alluvial. (iii) Nil. (iv) Local. (v) (a) 5 to 6 ploughings and 2 bakharings. (b) to (e) N.A. (vi) November-December 1959. (vii) Irrigated. (viii) and (ix) N.A. (x) March-April 1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type B on page 298 conducted at Bhagalpur.

5. RESULTS :

Treatment	0	n_1'	n_2'	n_1''	n_2''	n_1'''	n_2'''
Av. yield	913	1456	1679	1465	1687	1407	1489

G.M. 1442 lb./ac., S.E. = 48.3 lb./ac. and no. of trials = 12.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 55(92).**

Site :- Bikramganj (Village N.A., c.f.). **Type :- 'M'.**

Object :—To find out the best method of applying fertilizers to Wheat crop.

1. BASAL CONDITIONS :

(i) (a) and (b) Paddy. (c) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (ii) Clayey loam. (iii) Nil. (iv) NP—52 (Improved). (v) (a) 4 ploughings with *desi* plough. (b) Behind the plough. (c) 80 lb./ac. (d) Row to row 10". (e) —. (vi) 4, 5.12.1955. (vii) Irrigated. (viii) N.A. (ix) 2.9". (x) 1.4.1956.

2. TREATMENTS :

3 methods of applying 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super : M_1=By broadcasting, M_2= With the seed and M_3= Below seed.

3. DESIGN :

(i) and (ii) Canal irrigated villages were selected and fields representative of the village soil were selected. Design R.B.D. with 6 replications in B sets of 2 replications each. (iii) (a) 63′×16¼′, (b) 61′×14¼′. (iv) Yes.

4. GENERAL :

(i) Good. (ii) Mild attack of yellow-rust and aphids. (iii) Grain and straw yield. (iv) (a) 1955—1957. (b) No. (c) Nil. (v) (a) All Govt. Farms. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1246 lb./ac. (ii) 87.7 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3
Av. yield	1224	1325	1188

S.E. = 35.8 lb./ac.

Crop :- Wheat *(Rabi).* **Ref :- Bh. 55(93).**

Site :- Dhawan Village (Bikramganj, c.f.). **Type :- 'M'.**

Object :—To find out the best method of applying fertilizers to Wheat crop.

1. BASAL CONDITIONS :

(i) (a) and (b) Paddy. (c) 30 lb./ac. of N as A/S. (iii) Nil. (iv) NP—52 (Improved). (v) (a) 4 ploughings with *desi* plough. (b) Behind the plough. (c) 80 lb./ac. (d) Row to row 10″. (e) —. (vi) 27.11.1955. (vii) Irrigated. (viii) N.A. (ix) 2.9″. (x) 30.3.1956.

2. TREATMENTS :

Same as in expt. no. 55(92) on page 308.

3. DESIGN :

(i) and (ii) Canal irrigated villages were selected and fields representative of village soil were selected. Design adopted is R.B.D. with 2 replications. (iii) (a) 67′× 18′. (b) 65′×16.5′. (iv) Yes.

4. GENERAL :

(i) Good. (ii) Mild attack of yellow rust and aphids. (iii) Grain yield. (iv) (a) 1955—1957. (b) No. (c) Nil. (v) (a) and (b) N.A.

5. RESULTS :

(i) 887 lb./ac. (ii) 244.1 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3
Av. yield	711	1056	894

S.E./mean = 172.6 lb./ac.

Crop :- Wheat *(Rabi).* **Ref :- Bh. 55(91).**

Site :- Bahuara Village (Bikramganj, c.f.). **Type :- 'M'.**

Object :—To find out the best method of applying fertilizers to Wheat crop.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Paddy. (c) 30 lb./ac. of N as A/S. (ii) Clayey. (iii) Nil. (iv) NP—52 (Improved). (v) (a) 4 ploughings with *desi* plough. (b) Behind the plough. (c) 80 lb./ac. (d) Row to row 10″. (e) —. (vi) 9.12.1955. (vii) Irrigated. (viii) N.A. (ix) 2.9″. (x) 7.4.1956.

2. TREATMENTS :

Same as in expt. no. 55(92) on page 308.
Fertilizers applied : 40 lb./ac of N as A/S+40 lb./ac. of P_2O_5 as Super.

3. DESIGN :

(i) and (ii) Irrigated fields representative of the village soil type selected. R.B.D. with 2 replications. (iii) (a) 71′×16′6″. (b) 70′×15′6′. (iv) Yes.

4. GENERAL :

(i) Good. (ii) Mild attack of yellow rust and aphids. (iii) Grain and straw yield. (iv) (a) and(b) No. (v) to (vii) Nil.

5. RESULTS :

(i) 877 lb./ac. (ii) 16.3 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3
Av. yield	1004	863	763

S.E./mean = 11.5 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 56(47).**

Site :- Tendari Village (Bikramganj, c.f.). **Type :- 'M'.**

Object :—To find out the best method of applying fertilizers to Wheat crop.

1. BASAL CONDITIONS :

(i) (a) and (b) Paddy. (c) 30 lb./ac. of N+20 lb./ac. of P_2O_5. (ii) Sandy loam. (iii) Nil. (iv) NP—52 (Improved). (v) (a) 4 ploughings were given before sowing seeds. (b) Line sowing. (c) 80 lb./ac. (d) Row to row 10″. (e) N.A. (vi) 19,20.11.1956. (vii) Irrigated. (viii) Hoeing and weeding. (ix) 4.37″. (x) 26,27.3.1957.

2. TREATMENTS :

Same as in expt. no. 55(92) on page 308.

3. DESIGN :

(i) and (ii) Canal-irrigated villages selected and fields representative of village soil type were selected. Design adopted is R.B.D. with 8 replications. (iii) (a) 62.5′×13.5′ (b) 60.5×12′ (iv) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Biometric observations and grain yield. (iv) (a) 1955—57. (b) No. (c) Nil. (v) (a) and (b) N.A.(vi) and (vii) Nil.

5. RESULTS :

(i) 1437 lb./ac. (ii) 234.0 lb./ac. (iii) Treatment differences are not signigficant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3
Av. yield	1350	1515	1447

S.E./mean = 82.7 lb./ac.

Crop :- Wheat ***(Rabi).*** **Ref :- Bh. 56(245).**
Site :- Sasaram Village (Bikramganj, c.f.). **Type :- 'M'.**

Object :—To find out the best method of applying fertilizers to Wheat crop.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Clayey. (iii) Nil. (iv) NP—52. (v) (a) 4 ploughings. (b) Behind the plough. (c) 80 lb./ac. (d) Row to row 10″. (e) —. (vi) 19,20.11.1956. (vii) N.A. (viii) N.A. (ix) 2.59″. (x) 26,27.3.1957.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 55(92) on page 308.

5. RESULTS :

(i) 696 lb./ac. (ii) 113.4 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3
Av. yield	653	733	701

S.E./mean = 40.1 lb./ac.

Crop :- Wheat ***(Rabi).*** **Ref :- Bh. 56(246).**
Site :- Bikramganj (Village N.A., c.f.). **Type :- 'M'.**

nd out the best method of applying fertilizers to Wheat crop.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Clayey. (iii) Nil. (iv) NP—52. (v) (a) 4 ploughings. (b) Behind the plough. (c) 80 lb./ac. (d) Row to row 10″. (e) —. (vi) 1.12.1956. (vii) and (viii) N.A. (ix) 2.59″. (x) 7,8.3.1957.

2. TREATMENTS :

Same as in expt. no. 55(92) on page 308.

3. DESIGN :

(i) and (ii) Canal-irrigated villages selected and fields representative of village soil type were selected. Design adopted is R.B.D. with 8 replications. (iii) (a)35′×23½′. (b)33′×22′. (iv) Yes.

4. GENERAL .

(i) and (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1955—57. (b) No. (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1088 lb./ac. (ii) 204.8 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3
Av. yield	1088	1110	1065

S.E./mean = 72.4 lb./ac.

Crop :- Wheat ***(Rabi).*** **Ref :- Bh. 56(49).**
Site :- Dharupur Village (Bikramganj, c.f.). **Type :- 'M'.**

Object :—To find out the best method of applying fertilizers to Wheat crop.

1. BASAL CONDITIONS :

(i) (a) and (b) Paddy. (c) 25 lb./ac. of A/S+25 lb./ac. of Super at puddling. (ii) Clayey loam. (iii) Nil. (iv) NP—52 (Improved). (v) (a) 3 ploughings. (b) to (e) N.A. (vi) 1.12.1956. (vii) Irrigated. (viii) Hoeing and weeding. (ix) 4.37". (x) 7, 8.4.1957.

2. TREATMENTS :

Same as in expt. no. 55(92) on page 308.

3. DESIGN :

(i) and (ii) Canal-irrigated villages selected and fields representative of village soil types were selected. Design adopted is R.B.D. with 8 replications. (iii) (a) 35′×23′. (b) 33′×22′. (iv) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Biometric observations and grain yield. (iv) (a) 1955—1957. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2237 lb./ac. (ii) 602.3 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3
Av. yield	2236	2283	2191

S.E./mean = 212.9 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 57(250).**

Site :- Bikramganj (Village N.A., c.f.). **Type :- 'M'.**

Object :—To find out the best method of applying fertilizers to the Wheat crop.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Clayey. (iii) Nil. (iv) NP—52. (v) (a) 5 ploughings. (b) Behind the plough. (c) 80 lb./ac. (d) Row to row 10". (e) —. (vi) 6.12.1957. (vii) and (viii) N.A. (ix) 1.25". (x) 1.4.1958.

2. TREATMENTS :

Same as in expt. no. 55(92) on page 308.

3. DESIGN :

(i) and (ii) R.B.D. with 8 replications. (iii) (a) 30½′×30¼′. (b) 30′×29′. (iv) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1955—1957. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1112 lb./ac. (ii) 81.4 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3
Av. yield	1108	995	1233

S.E./mean = 28.8 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 55(161).**

Site :- Sampur Village (Gopalganj, c.f.). **Type :- 'M'.**

Object :—To find the best method of applying fertilizers to Wheat crop.

1. BASAL CONDITIONS :

(i) (a) and (b) Nil. (c) Nil. (ii) Sandy loam, alkaline in nature. (iii) Nil. (iv) NP—755 (Improved). (v) (a) 6 ploughings. (b) Behind the plough. (c) 40 srs./ac. (d) Row to row 10". (e) —. (vi) 20.11.1955. (vii) Irrigated. (viii) Weeding. (ix) 2.54". (x) 3.4.1956.

2. TREATMENTS :

Same as in expt. no. 55(92) on page 308.

3. DESIGN :

(i) and (ii) R.B.D. with 2 replications. (iii) (a) 72'×10'. (b) 69'×7'. (iv) Yes.

4. GENERAL :

(i) Good. (ii) Mild attack of yellow, brown and black rust—no measures adopted. (iii) Tiller count and yield of grain. (iv) (a) to (c) N.A. (v) (a) Bikramganj. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1593 lb./ac. (ii) 73.8 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3
Av. yield	1443	1533	1804

S.E./mean = 52.2 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 55(162).**

Site :- Durg Matihawa Village (Gopalganj, c.f.). **Type :- 'M'.**

Object :—To find the best method of applying fertilizers to Wheat crop.

1. BASAL CONDITIONS :

(i) (a) and (b) Paddy. (c) 12 C.L./ac. of F.Y.M. (ii) Alluvial soil. (iii) Nil. (iv) NP—755 (Improved). (v) (a) 6 ploughings. (b) Behind the plough. (c) 40 srs./ac. (d) Row to row 10". (e) —. (vi) 21.11.1955. (vii) Unirrigated. (viii) Weeding. (ix) 2.54". (x) 7.4.1956.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 55(161) above.

5. RESULTS :

(i) 1751 lb./ac. (ii) 18.1 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3
Av. yield	1623	1669	1962

S.E./mean = 12.8 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 55(163).**

Site :- Sirisia Village (Gopalganj, c.f.). **Type :- 'M'.**

Object :—To find out the best time and method of burying G.M. crop in Wheat fields.

1. BASAL CONDITIONS :

(i) (a) and (b) *Rahar*. (c) Nil. (ii) Sandy loam. (iii) No. (iv) Local. (v) (a) 6 ploughings. (b) Behind the plough. (c) 40 srs./ac. (d) Row to row 10″. (e) —. (vi) 5.11.1955. (vii) Irrigated. (viii) Weeding. (ix) 2.54″. (x) 1.4.1956.

2. TREATMENTS :

T_1=Control.
T_2=Sowing of G.M. crop in 1st week of July and burying in the middle of August.
T_3=Sowing of G.M. crop in 1st week of July, spreading in August and turning in 1st week of September.
T_4=Sowing of G.M. crops in 1st week of July, spreading in August and turning in last week of September.

3. DESIGN :

(i) and (ii) R.B.D. with 6 replicatians. (iii) (a) 33′×22′. (b) 30′×19′. (iv) Yes.

4. GENERAL :

(i) Good. (ii) Mild attack of yellow brown and black rust—no measures taken. (iii) Tiller count and grain yield. (iv) (a) to (c) N.A. (v) (a) All Govt. Farms. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1082 lb./ac. (ii) 130.8 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_1	T_2	T_3	T_4
Av. yield	675	1299	1236	1121

S.E./mean = 53.4 lb./ac.

Crop :- Wheat ***(Rabi)*****.** **Ref :- Bh. 55(167).**

Site :- Sirisia Village (Gopalganj, c.f.). **Type :- 'M'.**

Object :—To find out the best method of burying G.M. crop in Wheat field.

1. BASAL CONDITIONS :

(i) (a) and (b) *Rahar*. (c) Nil. (ii) Sandy loam. (iii) No. (iv) Local. (v) (a) 6 ploughings. (b) Behind the plough. (c) 40 srs./ac. (d) Row to row 10″. (e) —. (vi) 11.11.1955. (vii) Irrigated. (viii) Weeding. (ix) 2.54″. (x) 30.3.1955.

2. TREATMENTS :

M_0=Control.
M_1=Sannhemp grown and buried in *situ*.
M_2=Sannhemp grown and harvested at the bud stage at 6″ from the ground.
M_3=Sannhemp grown and harvested at 3′ from the ground.
M_4=The harvested top portion of M_1 incorporated.
M_5=The harvested portion from M_2 incorporated.
Sannhemp buried on 28.8.1955.

3. DESIGN :

(i) and (ii) R.B.D. with 6 replications. (iii) (a) 33′×22′. (b) 30′×19′. (iv) Yes.

4. GENERAL :

(i) Very good. (ii) Mild attack of yellow, brown and black rust—no measures adopted. (iii) Tiller count and grain yield. (iv) (a) to (c) N.A. (v) (a) Govt. Farms. (b) Nil. (vi) and (vii) Nil.

5, RESULTS :

(i) 1089 lb./ac. (ii) 139.4 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	764	1401	955	1223	1185	1006

S.E./mean = 56.9 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 55(131).**

Site :- Monghyr Sadar (Monghyr, c.f.). **Type :- 'M'.**

Object :—To study the manurial value of different G.M. crops on Wheat.

1. BASAL CONDITIONS :

(i) (a) and (b) G.M. crops as per treatments. (c) Nil. (ii) Sandy loam. (iii) Nil. (iv) NP—52 (Improved). (v) (a) 4 ploughings by *desi* plough, beaming, burying of G.M. crop. (b) Behind the plough. (c) 80 lb./ac. (d) Row to row 10". (e) —. (vi) 10.11.1955. (vii) Irrigated. (viii) Weeding. (ix) 1.26". (x) 15, 16.3.1956.

2. TREATMENTS :

5 G.M. crops preceeding Wheat : M_0=Control (no G.M.) M_1=*Sanai*, M_2=*Kalai*, M_3=*Moong*, M_4=*Guar* and M_5=*Dhaincha*.

3. DESIGN :

(i) and (ii) Canal-irrigated villages were selected. Fields representative of village soil were selected. Design adopted is R.B.D. with 4 replications. (iii) (a) 90'×12'. (b) 88.5'×10.5'. (iv) Yes.

4. GENERAL :

(i) Good. (ii) Attack of agrotis and termite—heavy irrigation and Aldrin were applied as control measures. (iii) Grain and straw yield. (iv) (a) to (c) No. (v) (a) All Govt. Farms. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1682 lb./ac. (ii) 124.6 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	1410	1989	1796	1567	1591	1736

S.E./mean = 62.3 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 55(126).**

Site :- Monghyr Sadar (Monghyr, c.f.). **Type :- 'M'.**

Object :—To study the manurial value of different G.M. crops on Wheat.

1. BASAL CONDITIONS :

(i) (a) and (b) G.M. crops. (c) Nil. (ii) Clayey loam. (iii) Nil. (iv) NP—52 (Improved). (v) (a) Preparatory cultivation by *desi* plough and beaming. (b) Behind the plough. (c) 80 lb./ac. (d) Row to row 10". (e) —. (vi) 9.11.1955. (vii) Irrigated. (viii) Weeding. (ix) 1.26". (x) 23.3.1956.

2. TREATMENTS :

Same as in expt. no. 55(131) above.

3- DESIGN :

(i) and (ii) Farms with facilities of irrigation selected. Design adopted is R.B.D. with 4 replications. (iii) (a) 45'×24'. (b) 43.5'×22.5'. (iv) Yes.

4. GENERAL :

(i) Not good. (ii) Mild attack of termites—no control measures taken. (iii) Grain and straw yield. (iv) (a) to (c) No. (v) (a) All Govt. Farms. (b) Nil. (vi) Nil. (vii) About 10% of plants were dried up or lost due to the lack of timely irrigation.

5. RESULTS :

(i) 1307 lb./ac. (ii) 310.8 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatments	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	1038	1257	1307	1394	1330	1513

S.E./mean = 155.4 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 55(129).**

Site :- Monghyr Sadar (Monghyr, c.f.). **Type :- 'M'**

Object :—To find out the best method of applying fertilizers to Wheat crop.

1. BASAL CONDITIONS :

(i) (a) and (b) Maize. (c) Nil. (ii) Sandy loam (a bit saline). (iii) Nil. (iv) NP—52 (Improved). (v) (a) 3 ploughings with *desi* plough and beaming. (b) Behind the plough. (c) 80 lb./ac. (d) Row to row 10″. (e) —. (vi) 14.11.1955. (vii) Irrigated. (viii) Weeding. (ix) 1.26″. (x) 25, 26.3.1956.

2. TREATMENTS :

Same as in expt. no. 55(92) on page 308.

3. DESIGN :

(i) and (ii) Farms with facilities for irrigation selected. Design adopted is R.B.D. with 4 replications. (iii) (a) 72.5′×15′. (b) 70.5′×13.5′. (iv) Yes.

4. GENERAL :

(i) Very good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) to (c) No. (v) (a) All Govt. Farms. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 2967 lb./ac. (ii) 556.8 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3
Av. yield	2815	2975	3112

S.E./mean 278.4 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 55(132).**

Centre :- Monghyr Sadar (Monghyr, c.f.). **Type :- 'M'.**

Object :—To find out the best time and method of burying G.M. crop in Wheat field.

1. BASAL CONDITIONS :

(i) (a) and (b) G.M. crop *sanai*. (c) Nil. (ii) Clay loam. (iii) Nil. (iv) NP—52 (Improved). (v) (a) Preparatory cultivation and burying of G.M. done by *desi* plough. (b) Behind the plough. (c) 80 lb./ac. (d) Row to row 10″. (e) —. (vi) 8.11.1955. (vii) Irrigated. (viii) Weeding. (ix) 1.26″. (x) 1,2.4.1956.

2. TREATMENTS :

1. Control (no manuring).
2. Sowing of G.M. crop in first week of July and burying in middle of August.
3. Sowing in first week of July and spreading in August and turning in first week of September.
4. Sowing in first week of July and spreading in August and turning in the last week of September.

3. DESIGN :

(i) and (ii) Farms with facilities for irrigation selected. Design adopted is R.B.D. with 6 replications. (iii) (a) 74′×17.′ (b) 72′×15′. (iv) Yes.

4. GENERAL :

(i) Very good. (ii) Attack of agrotis and termite—heavy irrigation and Aldrin were applied to control the attack. (iii) Grain and straw yield. (iv) (a) to (c) No. (v) (a) Govt. Farms. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1663 lb./ac. (ii) 107.5 lb./ac. (iii) Treament differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4
Av. yield	1134	1680	1860	1977

S.E./mean = 43.9 lb./ac.

Crop :- Wheat *(Rabi).* **Ref :- Bh. 55(125).**

Site :- Monghyr Sadar (Monghyr, c.f.). **Type :- 'M'.**

Object :—To find out the best time and method of burying G.M. crop in Wheat fields.

1. BASAL CONDITIONS :

(i) (a) and (b) G.M. crop *sanai*. (c) Nil. (ii) Clayey loam. (iii) Nil. (iv) NP—52 (Improved). (v) (a) Preparatory cultivation done by *desi* plough and beaming. (b) Behind the plough. (c) 80 lb./ac. (d) Row to row 10". (e) —. (vi) 10.11.1955. (vii) Irrigated (viii) Weeding. (ix) 1.26". (x) 21, 22.3.1956.

2. TREATMENTS :

Same as in expt. no. 55(132) on page 316.

3. DESIGN :

(i) and (ii) Fields with facility of irrigation selected. Design adopted is R.B.D. with 6 replications. (iii) (a) 45'×24'. (b) 43.5'×22.5'. (iv) Yes.

4. GENERAL:

(i) Good. (ii) Slight attack of termite—heavy irrigation was applied to control the attack. (iii) Grain and straw yield. (iv) (a) to (c) No. (v) (a) Govt. Farms. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1591 lb./ac. (ii) 280.2 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4
Av. yield	1576	1554	1652	1580

S.E./mean = 114.4 lb./ac.

Crop :- Wheat *(Rabi).* **Ref :- Bh. 55(133).**

Site :- Monghyr Sadar (Monghyr, c.f.). **Type :- 'M'.**

Object :—To find out the best method of burying G.M. crop in Wheat fields.

1. BASAL CONDITIONS :

(i) (a) and (b) G.M. crop *sanai*. (c) Nil. (ii) Clay loam. (iii) Nil. (iv) NP—52 (Improved). (v) (a) Preparatory cultivation done by *desi* plough and beaming. (b) Behind the plough. (c) 80 lb./ac. (d) Row to row 10". (e) — (vi) 9.11.1955. (vii) Irrigated. (viii) Weeding. (ix) 1.26". (x) 6, 7.4.1956.

2. TREATMENTS :

Same as in expt. no. 55(167) on page 314.

3. DESIGN :

(i) and (ii) Fields with facilities for irrigation selected. Design adopted is R.B.D. with 6 replications. (iii) (a) 72'×16.5'. (b) 70'×15'. (iv) Yes.

4. GENERAL :

(i) Very good. (ii) Attack of agrotis and termite—heavy irrigation and Aldrin were applied to control the attack. (iii) Grain and straw yield. (iv) (a) to (c) No. (v) (a) Govt. Farms. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1432 lb./ac. (ii) 175.9 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	1010	1422	1543	1579	1529	1508

S.E./mean = 71.8 lb./ac.

Crop :- Wheat *(Rabi).* **Ref :- Bh. 55(134).**

Site :- Monghyr Sadar (Monghyr, c.f.). Type :- 'M'.

Object :—To find out the best method of burying G.M. crop in Wheat field.

1. BASAL CONDITIONS :

(i) (a) and (b) G.M. crop *sanai*. (c) Nil. (ii) Clay loam. (iii) Nil. (iv) NP—52 (Improved). (v) (a) Preparatory cultivation done by *desi* plough and beaming. (b) Behind the plough, (c) 80 lb./ac. (d) Row to row 10". (e) —. (vi) 12.11.1955. (vii) Irrigated. (viii) Weeding. (ix) 1.26". (x) 3, 5.4.1956.

2. TREATMENTS

Same as in expt. no. 55(167) on page 314.

3. DESIGN :

(i) and (ii) Field with facilities for irrigation selected. Design adopted is R.B.D. with 6 replications. (iii) (a) 56'×20'. (b) 54'×18'. (iv) Yes.

4. GENERAL :

(i) Very good. (ii) Attack of agrotis and termite—heavy irrigation and Aldrin were applied to control the attack. (iii) Grain and straw yield. (iv) (a) to (c) No. (v) (a) Govt. Farms. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1716 lb./ac. (ii) 162.2 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	1360	1905	1713	1775	1721	1821

S.E./mean = 66.2 lb./ac.

Crop :- Wheat *(Rabi).* **Ref :- Bh. 55(69).**

Site :- Purnea Sadar (Purnea, c.f.). Type :- 'M'.

Object :—To find out the best method of burying G.M. crop in Wheat fields.

1. BASAL CONDITIONS :

(i) (a) and (b) G.M. crop *sanai*. (c) Nil. (ii) Sandy loam. (iii) Nil. (iv) NP—52 (Improved). (v) (a), (b), (d) and (e) N.A. (c) 80 lb./ac. (vi) 18.11.1955. (vii) Unirrigated. (viii) Weeding. (ix) 1.20". (x) 1 to 4.4.1956.

2. TREATMENTS :

Same as in expt. no. 55(167) on page 314.

3. DESIGN :

(i) and (ii) A big field selected, in which previously Jute was grown. Design adopted is R.B.D. with 6 replications. (iii) (a) and (b) 72'×15'. (iv) Yes.

4. GENERAL :

(i) Good. (ii) Attack of rust. (iii) Grain and straw yield. (iv) (a) to (c) No. (v) (a) Govt. Farms. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1159 lb./ac. (ii) 58.5 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	1086	1452	1055	1264	1079	1018

S.E./mean = 23.9 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 55(96).**

Site :- Purnea Sadar (Purnea, c.f.). **Type :- 'M'.**

Object :—To find out the best method of applying fertilizers to Wheat crop.

1. BASAL CONDITIONS :

(i) (a) and (b) Paddy. (c) Nil. (ii) Sandy loam. (iii) Nil. (iv) NP—52 (Improved). (v) (a) 3 ploughings by bullock plough. (b) Behind the plough. (c) 80 lb./ac. (d) Row to row 10". (e) —. (vi) 22.11.1955. (vii) Unirrigated. (viii) N.A. (ix) 1.20". (x) 3.4.1956.

2. TREATMENTS :

Same as in expt. no. 55(92) on page 308.

3. DESIGN :

(i) and (ii) Fields selected by the roadside. Design adopted is R.B.D. with 4 replications. (iii) (a) N.A. (b) 72′×15′. (iv) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Attack of black and yellow rust—no control measures taken. (iii) Grain and straw yield. (iv) (a) to (c) No. (v) (a) All Govt. Farms. (b) Nil. (iv) and (vii) Nil.

5. RESULTS :

(i) 1055 lb./ac. (ii) 162.8 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3
Av. yield	998	1049	1119

S.E./mean = 81.4 lb./ac.

EXPERIMENTS OF THE FIELD EXPERIMENTAL SPECIALIST ON WHEAT CROP.

Object :—To find out a suitable manurial schedule for Wheat for various tracts of Bihar.

ZONE I.

TREATMENTS

All combinations of (1), (2) and (3).

(1) Levels of N as A/S : $N_0=0$, $N_1=20$ and $N_2=40$ lb./ac.
(2) Levels of P_2O_5 as Super : $P_0=0$, $P_1=20$ and $P_2=40$ lb./ac.
(3) Levels of K_2O as Mur. Pot : $K_0=0$, $K_1=20$ and $K_2=40$ lb./ac.

I. IRRIGATED TRIALS

Serial no. : 1. **Block (Dist.) :** Topchanchi (Dhanbad). **Soil type :** Sandy loam. **Years :** 1957 to 1959.

RESULTS :

(i) 997 lb./ac. (ii) 110.7 lb./ac. (iii) Effects of N, P and K are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	872	946	1062	790	1004	1086	960
K_1	889	1070	1077	847	1045	1144	1012
K_2	897	1070	1086	889	1045	1119	1018
Mean	886	1029	1075	842	1031	1116	997
N_0	716	897	913				
N_1	963	1045	1086				
N_2	979	1144	1226				

No. of trials = 6.

Serial no. : 2. **Block (Dist.) :** Chattra (Hazaribagh). **Soil type :** Sandy loam. **Years :** 1956, 57 & 59.

RESULTS :

(i) 1083 lb./ac. (ii) 192.8 lb./ac. (iii) Effects of N, P and K are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	839	996	1127	790	1061	1111	987
K_1	996	1168	1200	880	1168	1316	1121
K_2	963	1209	1251	963	1209	1251	1141
Mean	933	1124	1193	878	1146	1226	1083
N_0	765	938	930				
N_1	987	1151	1300				
N_2	1046	1284	1348				

No. of trials = 5.

Serial no. : 3. **Block (Dist)** Chauparan (Hazaribagh). **Soil type :** Sandy loam. **Years :** 1956 to 1959.

RESULTS :

(i) 1069 lb./ac. (ii) 134.9 lb./ac. (iii) Effects of N, P and K are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	839	1037	1119	798	1045	1152	998
K_1	1045	1119	1193	963	1168	1226	1119
K_2	954	1111	1209	905	1127	1242	1091
Mean	946	1089	1174	889	1113	1207	1069
N_0	757	938	971				
N_1	1003	1128	1209				
N_2	1078	1201	1341				

No. of trials = 10.

Serial no. : 4. **Block (Dist.) :** Giridih (Hazaribagh). **Soil type :** Sandy loam, **Years :** 1956 to 1958.

RESULTS :

(i) 913 lb./ac. (ii) 166.8 lb./ac. (iii) Effects of N and P are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	724	979	988	675	938	1078	897
K_1	806	946	980	757	905	1070	911
K_2	864	963	962	773	979	1037	930
Mean	798	963	977	735	941	1062	913
N_0	617	815	773				
N_1	807	995	1020				
N_2	970	1078	1137				

No. of trials = 8

Serial no.: 5. **Block (Dist.) :** Jamui (Monghyr). **Soil type :** Clayey. **Years :** 1956 to 1959.

RESULTS :

(i) 714 lb./ac. (ii) 79.8 lb./ac. (iii) Effects of N and P are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	634	708	756	584	716	798	699
K_1	675	732	744	617	741	823	727
K_2	675	724	749	601	741	806	716
Mean	661	721	760	601	733	809	714
N_0	560	617	625				
N_1	692	724	782				
N_2	732	823	872				

No. of trials = 8.

Serial no.: 6. **Block (Dist.) :** Lakshmipur (Monghyr). **Soil type :** Loam. **Years :** 1956 to 1959.

RESULTS :

(i) 650 lb./ac. (ii) 104.5 lb./ac. (iii) Effects of N, P and K are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	543	634	642	535	609	675	606
K_1	650	675	716	642	667	732	680
K_2	634	650	707	601	658	732	664
Mean	609	653	688	593	645	713	650
N_0	568	576	634				
N_1	600	659	675				
N_2	659	724	756				

No. of trials = 12.

Serial no.: 7. **Block (Dist.) :** Sikandra (Monghyr). **Soil type :** Loam. **Years :** 1956 to 1959.

RESULTS :

(i) 932 lb./ac. (ii) 109.8 lb./ac. (iii) Effects of N, P and K are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	782	897	1003	691	856	1135	894
K_1	856	954	1028	757	946	1135	946
K_2	905	938	1028	806	938	1127	957
Mean	848	930	1020	751	913	1132	932
N_0	650	773	831				
N_1	856	897	987				
N_2	1037	1119	1241				

No. of trials = 7.

Serial no. : 8. **Block (Dist.) :** Garhwa (Palamau). **Soil type :** Sandy. **Years :** 1956, 1958 and 1959.

RESULTS :

(i) 686 lb./ac. (ii) 115.8 lb./ac. (iii) Effects of N, P and K are highly significant. Interaction N×P and N×K are significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	510	667	675	494	634	724	617
K_1	601	773	781	551	798	806	718
K_2	617	741	814	584	724	864	724
Mean	576	727	757	543	719	798	686
N_0	469	535	625				
N_1	600	774	782				
N_2	659	872	863				

No. of trials = 10.

Serial no. : 9. **Block (Dist.) :** Ghagra (Ranchi). **Soil type :** Loam. **Years :** 1956, 1958 and 1959.

RESULTS :

(i) 775 lb./ac. (ii) 127.7 lb./ac. (iii) Effects of N and P are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	699	757	783	601	716	922	746
K_1	691	864	855	683	773	954	803
K_2	691	815	822	625	749	954	776
Mean	694	812	820	636	746	943	775
N_0	527	691	691				
N_1	674	782	782				
N_2	880	963	987				

No. of trials = 6.

Serial no. : 10. **Block (Dist.) :** Kuru (Ranchi). **Soil type :** Loam. **Years :** 1956, 58 and 1959.

RESULTS :

(i) 634 lb./ac. (ii) 154.7 lb./ac. (iii) Effects of N, P and K are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	485	560	617	395	543	724	554
K_1	609	716	675	543	634	823	667
K_2	592	691	758	510	675	856	680
Mean	562	656	683	483	617	801	634
N_0	395	518	535				
N_1	559	651	642				
N_2	732	798	873				

No. of trials = 6.

Serial no. : 11. **Block (Dist.)** : Barharwa (Santhal Paraganas). **Soil type** : Sandy. **Years** : 1956 to 1959.

RESULTS :

(i) 1873 lb./ac. (ii) 300.7 lb./ac. (iii) Effects of N, P, K and interaction N×P are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1366	1720	2007	1325	1736	2032	1698
K_1	1497	1991	2321	1481	1950	2378	1936
K_2	1629	2032	2296	1621	1950	2386	1986
Mean	1497	1914	2208	1476	1879	2265	1873
N_0	1177	1530	1720				
N_1	1522	1901	2213				
N_2	1793	2312	2691				

No. of trials = 12.

Serial no. : 12. **Block (Dist.)** : Godda (Santhal Paraganas). **Soil type** : Sandy. **Years** : 1956 to 1958.

RESULTS :

(i) 1813 lb./ac. (ii) 337.0 lb./ac. (iii) Effects of N and P are highly significant. Effect of K is significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1440	1794	1884	1316	1728	2074	1706
K_1	1563	1917	2074	1489	1942	2123	1851
K_2	1670	1925	2049	1497	1876	2271	1881
Mean	1558	1879	2002	1434	1849	2156	1813
N_0	1233	1456	1613				
N_1	1539	1958	2049				
N_2	1901	2222	2345				

No. of trials = 6.

Serial no. : 13. **Block (Dist.)** : Madhupur (Santhal Paraganas). **Soil type** : Loam. **Years** : 1956, 57 and 1959.

RESULTS :

(i) 1280 lb./ac. (ii) 192.0 lb./ac. (iii) Effect of N is highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1234	1292	1308	1061	1259	1514	1278
K_1	1209	1259	1366	1070	1316	1448	1278
K_2	1267	1300	1284	1070	1267	1514	1284
Mean	1237	1284	1319	1067	1281	1492	1280
N_0	1004	1053	1144				
N_1	1307	1284	1251				
N_2	1399	1514	1563				

No. of trials = 6.

Serial no. : 14. **Block (Dist.) :** Pakur (Santhal Paraganas). **Soil type :** Loam. **Years :** 1957 to 1959.

RESULTS :

(i) 1199 lb./ac. (ii) 234.5 lb./ac. (iii) Effects of N and P are highly significant. Effect of K and interaction N×P are significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1053	1177	1200	847	1234	1349	1143
K_1	1061	1284	1349	905	1316	1473	1231
K_2	1037	1259	1373	913	1349	1407	1223
Mean	1050	1240	1307	888	1300	1410	1199
N_0	831	880	954				
N_1	1100	1392	1407				
N_2	1220	1448	1561				

No. of trials = 10.

Serial no. : 15. **Block (Dist.) :** Rameshwar (Santhal Paraganas). **Soil type :** Sandy. **Years :** 1957 to 1959.

RESULTS :

(i) 1158 lb./ac. (ii) 127.0 lb./ac. (iii) Effects of N, P and K are highly significant. Interaction P×K is significant (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	979	1078	1087	815	1111	1218	1048
K_1	1127	1177	1341	971	1259	1415	1215
K_2	1111	1209	1317	1012	1226	1399	1212
Mean	1072	1155	1248	933	1199	1344	1158
N_0	856	938	1004				
N_1	1127	1185	1284				
N_2	1234	1341	1457				

No. of trials = 7.

Serial no. : 16. **Block (Dist.) :** Bikramganj (Shahabad). **Soil type :** Sandy loam. **Years :** 1956 to 1959.

RESULTS :

(i) 1076 lb./ac. (ii) 163.2 lb./ac. (iii) Effects of N, P and K are highly significant. (iv) Av. yield of grain in lb./ac

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	798	1004	1151	806	1012	1135	984
K_1	905	1094	1210	856	1152	1201	1070
K_2	938	1308	1276	1160	1111	1251	1174
Mean	880	1135	1212	941	1092	1196	1076
N_0	699	1119	1004				
N_1	923	1110	1242				
N_2	1019	1177	1391				

No. of trials = 10.

Serial no. : 17. **Block (Dist.) :** Chenari (Shahabad). **Soil type :** Loam. **Years :** 1956, 57 and 1959.

RESULTS :

(i) 1416 lb./ac. (ii) 105.8 lb./ac. (iii) Effects of N, P and K are hignly significant. Interaction N×P is significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1209	1407	1540	1185	1399	1572	1385
K_1	1259	1456	1621	1234	1489	1613	1445
K_2	1234	1415	1604	1242	1407	1604	1418
Mean	1234	1426	1588	1220	1432	1596	1416
N_0	1012	1226	1423				
N_1	1284	1456	1555				
N_2	1406	1596	1787				

No. of trials = 8.

Serial no. : 18. **Block (Dist.) :** Dehri (Shahabad). **Soil type :** Sandy loam. **Years :** 1956 to 1959.

RESULTS :

(i) 1678 lb./ac. (ii) 244.4 lb./ac. (iii) Effects of N, P, K and interaction N×P are highly significant. Interaction N×K is significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1300	1621	1827	1119	1588	2041	1583
K_1	1349	1802	1958	1267	1884	1958	1703
K_2	1588	1728	1926	1259	1835	2148	1747
Mean	1412	1717	1904	1215	1769	2049	1678
N_0	839	1333	1473				
N_1	1579	1860	1868				
N_2	1819	1958	2370				

No. of trials = 6.

Serial no. : 19. **Block (Dist.) :** Sasaram (Shahabad). **Soil type :** Sandy loam. **Years :** 1956 to 1959.

RESULTS :

(i) 1022 lb./ac. (ii) 119.9 lb./ac. (iii) Effects of N, P and interaction N×P are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	806	1045	1152	831	1012	1160	1001
K_1	856	1053	1169	831	1070	1177	1026
K_2	880	1094	1144	872	1061	1185	1039
Mean	847	1064	1155	845	1048	1174	1022
N_0	615	897	1020				
N_1	905	1094	1144				
N_2	1020	1201	1301				

No. of trials = 11.

II. UNIRRIGATED TRIALS.

Serial no. : 1. **Block (Dist) :** Bundu (Ranchi). **Soil type :** Loam. **Years :** 1957 to 1959.

RESULTS :

(i) 1524 lb./ac. (ii) 229.8 lb./ac. (iii) Effects of N, P, K and interaction N×K are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1177	1432	1571	897	1333	1950	1393
K_1	1473	1514	1745	930	1679	2123	1577
K_2	1391	1637	1777	954	1654	2197	1602
Mean	1347	1528	1698	927	1555	2090	1524
N_0	798	954	1029				
N_1	1308	1531	1827				
N_2	1935	2098	2237				

No. of trials = 5.

Serial no. : 2. **Block (Dist.) :** Ormanjhi (Ranchi). **Soil type :** Loam. **Years :** 1956, 58 and 1959.

RESULTS :

(i) 851 lb./ac. (ii) 79.0 lb./ac. (iii) Effects of N and P are higly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	732	823	963	667	847	1004	839
K_1	757	839	963	683	856	1020	853
K_2	765	847	972	716	864	1004	861
Mean	751	836	966	689	856	1009	851
N_0	593	667	806				
N_1	750	846	971				
N_2	911	996	1121				

No. of trials = 6.

Serial no. : 3. **Block (Dist.) :** Boreo (Santhal Paraganas). **Soil type :** Loam. **Years :** 1956 to 1959.

RESULTS :

(i) 1361 lb./ac. (ii) 176.9 lb./ac. (iii) Effects of N, P and K are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1103	1308	1406	1020	1349	1448	1272
K_1	1185	1415	1588	1193	1415	1580	1396
K_2	1177	1432	1636	1193	1382	1670	1415
Mean	1155	1385	1543	1135	1382	1566	1361
N_0	929	1185	1292				
N_1	1168	1398	1580				
N_2	1368	1572	1758				

No. of trials = 7.

Serial no. : 4. **Block (Dist.) :** Jarmundi (Santhal Parganas). **Soil type :** Loam. **Years :** 1957 to 1959.

RESULTS :

(i) 714 lb./ac. (ii) 53.3 lb./ac. (iii) Effects of N, P, K, interactions N×P and N×K are all highly significant. (iv) Av. yield ofgrain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	584	683	724	543	683	765	664
K_1	634	765	806	560	773	872	735
K_2	625	790	815	568	798	864	743
Mean	614	746	782	557	751	834	714
N_0	494	568	609				
N_1	617	806	831				
N_2	732	864	905				

No. of trials = 8.

Serial no. : 5. **Block (Dist.) :** Sahebganj (Santhal Paraganas). **Soil type :** Sandy loam. **Years :** 1956 to 1959.

RESULTS :

(i) 1382 lb./ac. (ii) 206.0 lb./ac. (iii) Effects of N, P and K are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1070	1349	1399	979	1333	1506	1273
K_1	1242	1456	1696	1127	1506	1761	1465
K_2	1242	1448	1531	1103	1456	1662	1407
Mean	1185	1418	1542	1070	1432	1643	1382
N_0	897	1111	1201				
N_1	1268	1455	1572				
N_2	1389	1687	1853				

No. of trials = 9.

Serial no. : 6. **Block (Dist.) :** Sarath (Santhal Paraganas). **Soil type :** Clayey loam. **Years :** 1957 to 1959.

RESULTS :

(i) 706 lb./ac. (ii) 99.4 lb./ac. (iii) Interaction N×P is highly significant. (iv) Av. yield of grain lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	667	658	724	609	658	782	683
K_1	675	741	740	601	708	847	719
K_2	691	732	725	634	741	773	716
Mean	678	710	730	615	702	801	706
N_0	585	617	642				
N_1	684	724	699				
N_2	764	790	848				

No. of trials = 4.

ZONE II

TREATMENTS :

All combinations of (1), (2) and (3)

(1) Levels of N as A/S : $N_0=0$, $N_1=25$, $N_2=50$ lb./ac.
(2) Levels of P_2O_5 as Super : $P_0=0$, $P_1=25$, $P_2=50$ lb./ac.
(3) Levels of K_2O as Mur. Pot. : $K_0=0$, $K_1=20$ and $K_2=40$ lb./ac.

IRRIGATED TRIALS

Serial no. . 1. **Block (Dist.)** : Amarpur (Bhagalpur). **Soil type** : Loam. **Years** : 1957 to 1959.

RESULTS :

(i) 1289 lb./ac. (ii) 241.9 lb./ac. (iii) Effect of N is highly significant. Interaction P×K is significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1382	1193	1333	987	1308	1613	1303
K_1	1242	1267	1292	938	1300	1563	1267
K_2	1168	1391	1333	963	1382	1547	1297
Mean	1264	1284	1319	963	1330	1574	1289
N_0	955	913	1020				
N_1	1356	1268	1366				
N_2	1481	1670	1572				

No. of trials = 6.

Serial no. : 2. **Block (Dist.)** : Shahkund (Bhagalpur). **Soil type** : Clayey. **Years** : 1956 to 1959.

RESULTS :

(i) 1434 lb./ac. (ii) 178.5 lb./ac. (iii) Effects of N, P and interaction N×K are highly significant. Effect of K and interaction N×P are significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
N_0	1333	1399	1407	1259	1341	1539	1380
N_1	1391	1489	1497	1316	1374	1687	1459
N_2	1349	1514	1530	1349	1514	1530	1464
Mean	1358	1467	1478	1308	1410	1585	1434
K_0	1250	1308	1366				
K_1	1333	1514	1382				
K_2	1490	1580	1686				

No. of trials = 7.

Serial no. : 3. **Block (Dist.)** : Sultanganj (Bhagalpur). **Soil type** : Loam. **Years** : 1957 to 1959.

RESULTS :

(i) 1132 lb./ac. (ii) 153.0 lb./ac. (iii) Effects of N and P are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1111	1135	1102	979	1020	1349	1116
K_1	1111	1177	1209	913	1152	1432	1166
K_2	1045	1053	1243	922	1078	1341	1114
Mean	1089	1122	1185	938	1083	1374	1132
N_0	896	922	996				
N_1	1071	1052	1127				
N_2	1300	1391	143				

No. of trials = 5.

Serial no. : 4. **Block (Dist.) :** Aurangabad (Gaya). **Soil type :** Loam. **Years :** 1956 to 1959.

RESULTS :

(i) 1195 lb./ac. (ii) 102.9 lb./ac. (iii) Effects of N, P, K and interaction $N \times P$ are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1045	1160	1300	831	1185	1489	1168
K_1	1045	1234	1300	839	1193	1547	1193
K_2	1103	1259	1308	872	1259	1539	1223
Mean	1064	1218	1303	847	1212	1525	1195
N_0	690	856	996				
N_1	1112	1225	1300				
N_2	1391	1572	1612				

No. of trials = 10.

Serial no. : 5. **Block (Dist.) :** Bela (Gaya). **Soil type :** Clayey loam. **Years :** 1956 to 1959.

RESULTS :

(i) 1239 lb./ac. (ii) 122.6 lb./ac. (iii) Effect of N and P are highly significant. Effect K is significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1185	1209	1242	897	1242	1497	1212
K_1	1201	1300	1251	946	1292	1514	1251
K_2	1193	1267	1300	963	1267	1530	1253
Mean	1193	1259	1264	935	1267	1514	1239
N_0	889	954	963				
N_1	1209	1308	1284				
N_2	1481	1514	1546				

No. of trials = 9.

Serial no. : 6. **Block** (**Dist.**) : Bodhgaya (Gaya). **Soil type :** Clayey loam. **Years :** 1957 to 1959.

RESULTS :

(i) 675 lb./ac. (ii) 79.1 lb./ac. (iii) Effects of N and P are highly significant. Effect of K is significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	601	658	708	560	642	765	656
K_1	617	683	732	551	675	806	677
K_2	625	691	758	576	675	823	691
Mean	614	677	733	562	664	798	675
N_0	510	576	601				
N_1	618	650	724				
N_2	715	806	873				

No. of trials = 8.

Serial no. : 7. **Block** (**Dist.**) : Daudnagar (Gaya). **Soil type :** Sandy loam. **Years :** 1956 to 1959.

RESULTS :

(i) 1155 lb./ac. (ii) 113.6 lb./ac. (iii) Effects of N, P and K are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	922	1086	1135	724	1086	1333	1048
K_1	1078	1185	1266	847	1193	1489	1176
K_2	1094	1275	1350	930	1267	1522	1240
Mean	1031	1182	1250	834	1182	1448	1155
N_0	675	880	946				
N_1	1086	1193	1267				
N_2	1333	1473	1538				

No. of trials = 8.

Serial no. : 8. **Block** (**Dist.**) : Gaya Sadar (Gaya). **Soil type :** Loam. **Years :** 1956 to 1959.

RESULTS :

(i) 1258 lb./ac. (ii) 165.1 lb./ac. (iii) Effects of N, P and interaction N×P are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1168	1267	1301	1029	1242	1465	1245
K_1	1234	1275	1325	1012	1325	1497	1278
K_2	1168	1267	1317	1037	1259	1456	1251
Mean	1190	1270	1314	1026	1275	1473	1258
N_0	914	1037	1127				
N_1	1252	1299	1275				
N_2	1404	1473	1541				

No. of trials = 12.

Serial no : 9. **Block (Dist.) :** Govindpur (Gaya). **Soil type :** Loam. **Years :** 1957 to 1959.

RESULTS :

(i) 1313 lb./ac. (ii) 146.7 lb./ac. (iii) Main effect of N is highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1242	1267	1325	1127	1251	1456	1278
K_1	1292	1316	1374	1144	1316	1522	1327
K_2	1466	1292	1240	1234	1267	1497	1333
Mean	1333	1292	1313	1168	1278	1492	1313
N_0	1193	1135	1177				
N_1	1234	1267	1333				
N_2	1573	1473	1429				

No. of trials = 6.

Serial no. : 10 **Block (Dist.) :** Jehanabad (Gaya). **Soil type :** Loam. **Years :** 1956 to 1959.

RESULTS :

(i) 1249 lb./ac. (ii) 96.7 lb./ac. (iii) Effects of N, P and K are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1086	1218	1324	987	1209	1432	1209
K_1	1144	1259	1366	1029	1251	1489	1256
K_2	1152	1292	1398	1078	1242	1522	1281
Mean	1127	1256	1363	1031	1234	1487	1249
N_0	897	1037	1160				
N_1	1126	1243	1333				
N_2	1359	1489	1595				

No. of trials = 10.

Serial no. : 11. **Block (Dist.) :** Kawakole (Gaya). **Soil type :** Sandy. **Yeers :** 1956 to 1959.

RESULTS :

(i) 929 lb./ac. (ii) 91.3 lb./ac. (iii) Effects of N, P and K are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	765	905	996	757	922	987	889
K_1	839	979	1045	806	979	1078	954
K_2	831	971	1028	806	930	1094	943
Mean	812	952	1023	790	944	1053	929
N_0	666	839	864				
N_1	815	963	1053				
N_2	954	1053	1152				

No. of trials = 8.

Serial no. : 12. **Block (Dist.) :** Khizirsarai (Gaya). **Soil type :** Loam. **Years :** 1957 to 1959.

RESULTS :

(i) 1299 lb./ac. (ii) 100.8 lb./ac. (iii) Effects of N and P are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1218	1325	1340	954	1308	1621	1294
K_1	1193	1284	1374	963	1292	1596	1284
K_2	1234	1341	1383	996	1316	1646	1319
Mean	1215	1317	1366	971	1305	1621	1299
N_0	881	1012	1020				
N_1	1223	1316	1376				
N_2	1541	1621	1701				

No. of trials = 6.

Serial no. : 13. **Block (Dist.) :** Nabinagar (Gaya). **Soil type :** Clayey loam. **Years :** 1956 to 1959.

RESULTS :

(i) 1117 lb./ac. (ii) 91.3 lb./ac. (iii) Effects of N, P, K, interactions N×P and N×K are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	971	1086	1210	798	1103	1366	1089
K_1	1029	1152	1225	872	1168	1366	1135
K_2	1004	1135	1243	847	1103	1432	1127
Mean	1001	1124	1226	839	1125	1388	1117
N_0	707	831	979				
N_2	1037	1160	1177				
N_2	1260	1382	1522				

No. of trials = 8.

Serial no. : 14. **Block (Dist.) :** Nawadah (Gaya). **Soil type :** Sandy loam. **Years :** 1956 to 1959.

RESULTS :

(i) 1244 lb./ac. (ii) 115.5 lb./ac. (iii) Effects of N and P are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1127	1267	1292	987	1267	1432	1229
K_1	1152	1267	1292	1045	1259	1407	1237
K_2	1185	1251	1365	1053	1308	1440	1267
Mean	1155	1262	1316	1028	1278	1426	1244
N_0	905	1053	1127				
N_1	1217	1292	1325				
N_2	1342	1440	1497				

No. of trial = 11.

Serial no. : 15. **Block (Dist.) :** Pakribrawan (Gaya). **Soil type :** Clayey. **Years :** 1956 to 1959.

RESULTS :

(i) 1329 lb./ac. (ii) 106.3 lb./ac. (iii) Effects of N, P and K are highly significant. Interaction N×P is significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1119	1366	1390	1127	1333	1415	1292
K_1	1226	1374	1456	1209	1382	1465	1352
K_2	1201	1374	1457	1152	1374	1506	1344
Mean	1182	1371	1434	1163	1363	1462	1329
N_0	978	1226	1284				
N_1	1242	1399	1448				
N_2	1326	1489	1571				

No. of trials = 10.

Serial no. : 16. **Block (Dist) :** Rajanli (Gaya). **Soil type :** Sandy loam. **Years :** 1956 to 1959.

RESULTS :

(i) 1070 lb./ac. (ii) 75.0 lb./ac. (iii) Effects of N, P are highly significant and effect of K and Interaction N×P are significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	987	1045	1111	954	1045	1144	1048
K_1	1020	1061	1144	987	1061	1177	1075
K_2	1029	1070	1159	987	1094	1177	1086
Mean	1012	1059	1138	976	1067	1166	1070
N_0	921	954	1053				
N_1	1019	1054	1127				
N_2	1096	1168	1234				

No. of trials = 12.

Serial no : 17. **Block (Dist.) :** Sherghati (Gaya). **Soil type :** Sandy loam. **Years :** 1956 to 1959.

RESULTS :

(i) 1219 lb./ac. (ii) 117.3 lb./ac. (iii) Effects of N, P and interaction N×K are highly significant. Interaction N×P is significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1045	1259	1307	880	1316	1415	1204
K_1	1070	1251	1340	946	1333	1382	1220
K_2	1086	1284	1324	996	1316	1382	1231
Mean	1067	1265	1324	941	1322	1393	1219
N_0	839	963	1020				
N_1	1151	1391	1423				
N_2	1211	1440	1528				

No. of trials = 9.

Serial no. : 18. **Block (Dist.)** : Tekari (Gaya). **Soil type** : Loam. **Years** : 1956 to 1959.

RESULTS :

(i) 993 lb./ac. (ii) 109.8 lb./ac. (iii) Effects of N, P, K and interaction N×P are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	806	979	1079	683	922	1259	955
K_1	872	1020	1095	749	971	1267	996
K_2	889	1045	1152	815	1004	1267	1029
Mean	856	1015	1109	749	966	1264	993
N_0	569	781	897				
N_1	872	988	1037				
N_2	1126	1275	1392				

No. of trials = 10.

Serial no. : 19. **Block (Dist.)** : Warisaliganj (Gaya). **Soil type** : Loam. **Years** : 1957 to 1959.

RESULTS :

(i) 1201 lb./ac. (ii) 130.8 lb./ac. (iii) Effects N, P and K are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1053	1152	1202	930	1152	1325	1136
K_1	1135	1251	1325	1004	1226	1481	1237
K_2	1201	1300	1185	987	1234	1465	1229
Mean	1130	1234	1237	974	1204	1424	1201
N_0	855	996	1070				
N_1	1103	1267	1242				
N_2	1431	1440	1400				

No. of trials = 7.

Serial no. : 20. **Block (Dist.)** : Wazirganj (Gaya). **Soil type** : Loam. **Years** : 1956, 57 and 1959.

RESULTS :

(i) 1362 lb./ac. (ii) 149.9 lb./ac. (iii) Effects of N, P and K are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1185	1292	1398	1086	1308	1481	1292
K_1	1259	1374	1506	1185	1407	1547	1380
K_2	1308	1432	1505	1160	1481	1604	1415
Mean	1251	1366	1470	1144	1399	1544	1362
N_0	1070	1135	1226				
N_1	1299	1391	1506				
N_2	1383	1572	1677				

No. of trials = 8.

Serial no. : 21. **Block (Dist.) :** Sheikhpura (Monghyr). **Soil type :** Loam. **Years :** 1956 to 1959.

RESULTS :

(i) 1287 lb./ac. (ii) 158.8 lb./ac. (iii) Effects of N, P, K, interactions N×P, N×P and P×K are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1020	1119	1169	954	1070	1284	1103
K_1	1111	1473	1406	1078	1382	1530	1330
K_2	1234	1506	1547	1259	1391	1637	1429
Mean	1122	1366	1374	1097	1281	1484	1287
N_0	954	1193	1144				
N_1	1111	1391	1341				
N_2	1300	1514	1637				

No. of trials = 14.

Serial no. : 22. **Block (Dist.) :** Tarapur (Monghyr). **Soil type :** Loam. **Years :** 1957 to 1959.

RESULTS :

(i) 1148 lb./ac. (ii) 195.8 lb./ac. (iii) Effects of N, P and K are hignly significant. Interaction N×P is significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	930	1160	1127	831	1119	1267	1072
K_1	1119	1168	1226	905	1242	1366	1171
K_2	1078	1193	1333	938	1218	1448	1201
Mean	1042	1174	1229	891	1193	1360	1148
N_0	790	905	979				
N_1	1103	1217	1259				
N_2	1234	1399	1448				

No. of trials = 8.

Serial no. : 23. **Block (Dist.)** Asthawan (Patna). **Soil type :** Sandy. **Years :** 1956 to 1959.

RESULTS :

(i) 1600 lb./ac. (ii) 129.2 lb./ac. (iii) Effects of N, P and interaction N×P are highly significant. Effect of K is significant. (iv) Av. yield of grain in lb./ac.

	N_0	N_1	N_2	P_0	P_1	P_2	Mean
K_0	1270	1643	1805	1333	1632	1753	1573
K_1	1308	1668	1879	1437	1681	1736	1618
K_2	1295	1671	1865	1418	1676	1736	1610
Mean	1291	1661	1850	1396	1663	1742	1600
P_0	1097	1451	1640				
P_1	1330	1786	1873				
P_2	1446	1745	2035				

No. of trials = 12.

Serial no. : 24. **Block (Dist.) :** Bakhtiarpur (Patna). **Soil type :** Loam. **Years :** 1956 to 1959.

RESULTS :

(i) 1848 lb./ac. (ii) 269.1 lb./ac. (iii) Effects of N, P are highly significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	1443	1511	1465	1212	1522	1684	1473
N_1	1802	1857	1917	1528	1920	2128	1859
N_2	2137	2246	2255	1887	2312	2438	2212
Mean	1794	1871	1879	1542	1918	2083	1848
P_0	1500	1536	1591				
P_1	1898	1950	1906				
P_2	1983	2128	2140				

No. of trials = 10.

Serial no. : 25. **Block (Dist.) :** Barh (Patna). **Soil type :** Loam. **Years :** 1956 to 1959.

RESULTS :

(i) 2024 lb./ac. (ii) 139.9 lb./ac. (iii) Effects of N, P, K and interaction N×P are highly significant. Interaction N×K is significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	1646	1802	1827	1489	1824	1961	1758
N_1	1956	2106	2049	1895	2071	2145	2037
N_2	2103	2339	2386	2030	2295	2504	2276
Mean	1902	2082	2087	1805	2063	2203	2024
P_0	1728	1849	1838				
P_1	1925	2125	2139				
P_2	2051	2273	2285				

No. of trials = 10.

Serial no. : 26. **Block (Dist.) :** Biharsharif (Patna). **Soil type :** Loam. **Years :** 1956 to 1959.

RESULTS :

(i) 1238 lb./ac. (ii) 104.5 lb./ac. (iii) Effects of P and K are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1119	1234	1275	1020	1242	1366	1209
K_1	1177	1292	1274	1053	1275	1415	1248
K_2	1168	1259	1342	1037	1300	1432	1256
Mean	1155	1262	1297	1037	1272	1404	1238
N_0	937	1070	1103				
N_1	1201	1283	1333				
N_2	1326	1432	1455				

No. of trials = 10.

Serial no. : 27. **Block (Dist.) :** Bihta (Patna). **Soil type :** Clayey loam. **Years :** 1957 to 1959.

RESULTS

(i) 1352 lb./ac. (ii) 115.2 lb./ac. (iii) Effects of N, P and K are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1251	1333	1341	1037	1300	1588	1308
K_1	1292	1374	1464	1086	1349	1695	1377
K_2	1284	1432	1398	1094	1358	1662	1371
Mean	1276	1380	1401	1072	1336	1648	1352
N_0	988	1094	1135				
N_1	1250	1383	1374				
N_2	1589	1662	1694				

No. of trials = 8.

Serial no. 28. : Block (Dist). Bikram (Patna). **Soil type :** Loam. **Years :** 1956 to 59.

RESULTS :

(i) 1812 lb./ac. (ii) 215.3 lb./ac. (iii) Effects of N, P and K are higly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1646	1703	1893	1415	1786	2041	1747
K_1	1720	1893	1942	1465	1860	2230	1852
K_2	1654	1950	1909	1481	1827	2205	1838
Mean	1673	1849	1915	1454	1824	2159	1812
N_0	1226	1539	1596				
N_1	1763	1826	1884				
N_2	2031	2181	2264				

No. of trials = 8.

Serial no. : 29. **Block (Dist) :** Dinapur (Patna). **Soil type :** Loam. **Years :** 1956 to 1959.

RESULTS :

(i) 1107 lb./ac. (ii) 85.6 lb./ac. (iii) Effects of N and P are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1045	1119	1127	938	1119	1234	1097
K_1	1061	1103	1152	938	1119	1259	1105
K_2	1070	1144	1143	938	1168	1251	1119
Mean	1059	1122	1141	938	1135	1248	1107
N_0	864	963	987				
N_1	1102	1144	1160				
N_2	1210	1259	1275				

No. of trials = 12.

Serial no. : 30. **Block (Dist.) :** Ekangarsarai (Patna). **Soil type :** Loam. **Years :** 1956 to 1959.

RESULTS :

(i) 1697 lb./ac. (ii) 160.6 lb./ac. (iii) Effects of N, P and K are highly significant. Interactions N×P and N×K are significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1470	1703	1769	1355	1728	1859	1647
K_1	1506	1788	1852	1355	1868	1923	1715
K_2	1519	1752	1914	1366	1925	1895	1729
Mean	1498	1748	1845	1359	1840	1892	1697
N_0	1223	1380	1473				
N_1	1605	1922	1994				
N_2	1667	1942	2068				

No. of trials = 10.

Serial no. : 31. **Block (Dist.) :** Fatwah (Patna). **Soil type :** Loam. **Years :** 1956 to 1959.

RESULTS :

(i) 1810 lb./ac. (ii) 147.3 lb./ac. (iii) Effects of N, P and K are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1497	1738	1844	1366	1810	1901	1692
K_1	1703	1925	2001	1506	2000	2123	1876
K_2	1670	1900	2016	1522	1909	2156	1862
Mean	1623	1854	1954	1465	1906	2060	1810
N_0	1292	1539	1563				
N_1	1711	1950	2057				
N_2	1865	2074	2241				

No. of trials = 8.

Serial no. : 32. **Block (Dist.) :** Giriak (Patna). **Soil type :** Loam. **Years :** 1956 to 1959.

RESULTS :

(i) 1794 lb./ac. (ii) 241.4 lb./ac. (iii) Effects of N, P, K and interactions N×P and N×K are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1456	1728	1802	1407	1613	1966	1662
K_1	1613	1909	1998	1423	1818	2279	1840
K_2	1695	1901	2048	1407	1884	2353	1881
Mean	1588	1846	1949	1412	1772	2199	1794
N_0	1283	1448	1506				
N_1	1587	1852	1876				
N_2	1894	2238	2466				

No. of trials = 14.

Serial no. : 33. **Block (Dist.) :** Maner (Patna). **Soil type :** Loam. **Years :** 1956 to 1959.

RESULTS :

(i) 1170 lb./ac. (ii) 266.1 lb./ac. (iii) Effects of N and P are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1012	1234	1226	905	1226	1341	1157
K_1	1086	1111	1300	889	1300	1308	1166
K_2	1103	1292	1168	996	1308	1259	1188
Mean	1067	1212	1231	930	1278	1303	1170
N_0	824	1020	946				
N_2	1143	1333	1358				
N_1	1234	1284	1390				

No. of trials = 7.

Serial no. : 34. **Block (Dist.) :** Masaurhi (Patna). **Soil type :** Loam. **Years :** 1956 to 1959.

RESULTS :

(i) 1052 lb./ac. (ii) 367.7 lb./ac. (iii) Effect of N is highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
0	954	1029	1069	749	987	1316	1017
K_1	996	1061	1102	806	1053	1300	1053
K_2	979	1185	1095	815	1053	1391	1086
Mean	976	1092	1089	790	1031	1336	1052
N_0	716	823	831				
N_1	937	1086	1070				
N_2	1276	1366	1365				

No. of trials = 8.

Serial no. : 35. **Block (Dist.) :** Mokameh (Patna). **Soil type :** Loam. **Years :** 1956 to 1959.

RESULTS :

(i) 1392 lb./ac. (ii) 295.0 lb./ac. (iii) Effect of N is highly significant. Effect of P and interaction P×K are significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1341	1399	1390	1259	1374	1497	1377
K_1	1234	1366	1514	1218	1300	1596	1371
K_2	1440	1399	1448	1251	1473	1563	1429
Mean	1338	1388	1451	1243	1382	1552	1392
N_0	1235	1209	1284				
N_1	1348	1359	1440				
N_2	1432	1596	1628				

No. of trials = 10.

Serial no. : 36. **Block (Dist.) :** Naubatpur (Patna). **Soil type :** Loam. **Years :** 1956 to 1959.

RESULTS :

(i) 1636 lb./ac. (ii) 172.0 lb./ac. (iii) Effects of N, P, K and interaction N×P are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1341	1662	1717	1256	1382	1314	1317
K_1	1473	1741	1832	1621	1766	1698	1695
K_2	1429	1728	1802	1843	1898	1947	1896
Mean	1414	1710	1784	1573	1682	1653	1636
N_0	1094	1396	1462				
N_1	1531	1769	1786				
N_2	1618	1966	2103				

No. of trials = 12.

Serial no. : 37. **Block (Dist.) :** Paliganj (Patna). **Soil type :** Loam. **Years :** 1957 to 1959.

RESULTS :

(i) 2505 lb./ac. (ii) 382.9 lb./ac. (iii) Effects of P, K and interaction N×P are highly significant. Effects of N and interaction P×K are significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	2181	2329	2361	1975	2320	2576	2290
K_1	2164	2748	2764	2139	2608	2929	2559
K_2	2230	2962	2806	2386	2683	2929	2666
Mean	2192	2680	2644	2167	2537	2811	2505
N_0	1678	2411	2411				
N_1	2304	2789	2518				
N_2	2593	2839	3002				

No. of trials = 6.

Serial no. : 38. **Block (Dist.) :** Silao (Patna). **Soil type :** Loam. **Years :** 1956 to 1959.

RESULTS :

(i) 1765 lb./ac. (ii) 315.2 lb./ac. (iii) Effects of N, P and K are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1506	1654	1753	1473	1646	1794	1638
K_1	1629	1934	1810	1588	1860	1925	1791
K_2	1728	1999	1876	1596	1925	2082	1868
Mean	1621	1862	1813	1552	1810	1934	1765
N_0	1424	1637	1596				
N_1	1605	1860	1966				
N_2	1834	2090	1877				

No. of trials = 10.

Serial no : 39. **Block (Dist.) :** Arrah Sadar (Shahabad). **Soil type :** Loam. **Years :** 1956 to 1959.

RESULTS :

(i) 1363 lb./ac. (ii) 148.1 lb./ac. (iii) Effects of N, P and interaction N×P are highly significant and interaction P×K is significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1234	1341	1465	897	1333	1810	1347
K_1	1185	1374	1547	913	1407	1786	1369
K_2	1193	1399	1530	913	1382	1827	1374
Mean	1204	1371	1514	908	1374	1808	1363
N_0	814	946	963				
N_1	1209	1399	1514				
N_2	1589	1769	2065				

No. of trials = 10.

Serial no : 40. **Block (Dist.) :** Behea (Shahabad). **Soil type :** Loam. **Years :** 1956 to 1959.

RESULTS :

(i) 1222 lb./ac. (ii) 123.4 lb./ac. (iii) Effects of N, P and K are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1037	1160	1225	987	1160	1275	1141
K_1	1152	1292	1341	1111	1251	1423	1262
K_2	1160	1284	1342	1070	1284	1432	1262
Mean	1116	1245	1303	1056	1232	1377	1222
N_0	955	1086	1127				
N_1	1136	1251	1308				
N_2	1258	1399	1473				

No. of trials = 11.

Serial no : 41. **Block (Dist.)** Bhabua (Shahabad). **Soil type :** Loam. **Years :** 1956, 1958 and 1959.

RESULTS :

(i) 1054 lb./ac. (ii) 138.4 lb./ac. (iii) Effects of N, P and K are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	839	954	1079	782	979	1111	957
K_1	971	1111	1184	847	1127	1292	1089
K_2	963	1177	1208	880	1119	1349	1116
Mean	924	1081	1157	836	1075	1251	1054
N_0	732	839	938				
N_1	904	1136	1185				
N_2	1137	1267	1348				

No. of trials = 8.

Serial no. : 42. **Block (Dist.) :** Buxar (Shahabad). **Soil type :** Loam. **Years :** 1956 to 1959.

RESULTS :

(i) 874 lb./ac. (ii) 148.1 lb./ac. (iii) Effects of N, P and interaction N×P are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	765	913	939	634	880	1103	872
K_1	773	854	941	634	864	1070	856
K_2	757	938	987	658	954	1070	894
Mean	765	902	956	642	899	1081	874
N_0	585	658	683				
N_1	799	961	938				
N_2	911	1086	1246				

No. of trials 10.

Serial no. : 43. **Block (Dist.) :** Dumraon (Shahabad). **Soil type :** Loam. **Years :** 1956 to 1959.

5. RESULTS :

(i) 1289 lb./ac. (ii) 85.1 lb./ac. (iii) Effects of N, P, K and interaction N×P are highly significant and interaction N×PK is significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1152	1234	1366	1004	1251	1497	1251
K_1	1193	1325	1399	1086	1325	1506	1306
K_2	1226	1316	1391	1078	1325	1530	1311
Mean	1190	1292	1385	1056	1300	1511	1289
N_0	921	1070	1177				
N_1	1227	1316	1358				
N_2	1423	1489	1621				

No. of trials = 14.

Serial no. : 44. **Block (Dist.) :** Durgawati (Shahabad). **Soil type :** Sandy loam. **Years :** 1956 to 1959.

RESULTS :

(i) 1190 lb./ac. (ii) 137.7 lb./ac (iii) Effects of N, P, K and interaction N×K are highly signifiant. Interaction P×K is significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1012	1152	1152	905	1078	1333	1105
K_1	1094	1226	1341	954	1177	1530	1220
K_2	1111	1259	1365	979	1209	1547	1245
Mean	1072	1212	1286	946	1155	1470	1190
N_0	822	979	1037				
N_1	1053	1177	1234				
N_2	1342	1481	1587				

No. of trials = 12,

Serial no. : 45. **Block (Dist.) :** Koilwar (Shahabad). **Soil type :** Sandy loam. **Years :** 1957 to 1959.

RESULTS :

(i) 1224 lb./ac. (ii) 111.9 lb./ac. (iii) Effects of N and P are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1119	1251	1267	963	1218	1456	1212
K_1	1144	1242	1275	1012	1209	1440	1220
K_2	1119	1292	1307	1012	1209	1497	1239
Mean	1127	1262	1283	996	1212	1464	1224
N_0	929	1029	1029				
N_1	1126	1226	1284				
N_2	1327	1530	1536				

No. of trials = 6.

Serial no. : 46. **Block (Dist.) :** Kudra (Shahabad). **Soil type :** Loam. **Years :** 1956 to 1959.

5. RESULTS :

(i) 726 lb./ac. (ii) 94.6 lb./ac. (iii) Effects of N, P, K and interactions N×P and P×K are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	576	683	807	560	650	856	689
K_1	634	790	815	601	708	930	746
K_2	625	815	790	568	708	954	743
Mean	612	763	804	576	689	913	726
N_0	478	576	675				
N_1	585	749	732				
N_2	772	963	1005				

No. of trials = 10.

Serial no. : 47. **Block (Dist.) :** Mohania (Shahabad). **Soil type :** Loam. **Years :** 1956 to 1958.

RESULTS :

(i) 1141 lb./ac. (ii) 126.1 lb./ac. (iii) Effects of N, P and K are highly significant. Interaction P×K is significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1020	1078	1168	930	1094	1242	1089
K_1	1012	1177	1283	971	1152	1349	1157
K_2	1037	1185	1307	979	1168	1382	1176
Mean	1023	1147	1253	960	1138	1324	1141
N_0	799	987	1094				
N_1	1035	1128	1251				
N_2	1235	1325	1413				

No. of trials = 8.

Serial no. : 48. **Block (Dist.) :** Nawanagar (Shahabad). **Soil type :** Sandy loam. **Years :** 1956 to 1959.

RESULTS :

(i) 1468 lb./ac. (ii) 93.1 lb./ac. (iii) Effects of N, P, K and interaction N×P are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1349	1489	1474	1267	1473	1572	1437
K_1	1425	1547	1555	1349	1539	1638	1509
K_2	1415	1514	1449	1284	1506	1588	1459
Mean	1396	1517	1493	1300	1506	1599	1468
N_0	1152	1333	1415				
N_1	1416	1514	1588				
N_2	1619	1703	1475				

No. of trials = 9.

Serial no : 49. **Block (Dist.) :** Piro (Shahabad). **Soil type :** Loam. **Years :** 1956, 1958 and 1959.

RESULTS :

(i) 1045 lb./ac. (ii) 212.3 lb./ac. (iii) Effects of N, P and interaction N×K are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	905	1053	1054	741	979	1292	1004
K_1	922	1152	1126	699	1193	1308	1067
K_2	913	1103	1177	708	1201	1284	1064
Mean	913	1103	1119	716	1124	1295	1045
N_0	601	724	823				
N_1	970	1210	1193				
N_2	1169	1374	1341				

No. of trials = 8.

Serial no : 50. **Block (Dist.) :** Shahapur (Shahabad). **Soil type :** Loam. **Years :** 1956 to 1959.

RESULTS :

(i) 1334 lb./ac. (ii) 173.4 lb./ac. (iii) Effects of N and P are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1078	1349	1457	996	1358	1530	1295
K_1	1103	1391	1537	1127	1341	1563	1344
K_2	1185	1423	1481	1037	1456	1596	1363
Mean	1122	1388	1492	1053	1385	1563	1334
N_0	880	1103	1177				
N_1	1136	1456	1563				
N_2	1350	1604	1735				

No. of trials = 8.

ZONE III

TREATMENTS :

All combinations of (1), (2) and (3)

(1) Levels of N as A/S : $N_0=0$, $N_1=25$, $N_2=50$ lb./ac.
(2) Levels of P_2O_5 as Super : $P_0=0$, $P_1=20$, $P_2=40$ lb./ac.
(3) Levels of K_2O as Mur. Pot. : $K_0=0$, $K_1=20$ and $K_2=40$ lb./ac.

I. IRRIGATED TRIALS

Serial no. : 1. **Block (Dist.)** : Bettiah (Champaran). **Soil type** : Clayey. **Years :** 1956 to 1959.

RESULTS :

(i) 941 lb./ac. (ii) 218.0 lb./ac. (iii) Effects of N, P and K are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	773	930	1013	650	922	1144	905
K_1	847	971	1054	724	971	1177	957
K_2	880	938	1061	724	954	1201	960
Mean	833	946	1043	699	949	1174	941
N_0	592	708	798				
N_1	831	963	1053				
N_2	1077	1168	1277				

No. of trials = 12.

Serial no. : 2. **Block (Dist.)** : Sikarpur (Champaran). **Soil type** : Clayey. **Years :** 1956 to 1959.

RESULTS :

(i) 1648 lb./ac. (ii) 162.3 lb./ac. (iii) Effects of N, P and K are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1325	1629	1744	1341	1621	1736	1566
K_1	1440	1736	1860	1399	1744	1893	1679
K_2	1432	1769	1892	1423	1728	1942	1698
Mean	1399	1711	1832	1388	1698	1857	1648
N_0	1160	1423	1580				
N_1	1432	1777	1884				
N_2	1605	1934	2032				

No. of trials = 6.

Serial no. : 3. **Block (Dist.)** : Sugauli (Champaran). **Soil type** : Sandy loam. **Years :** 1956 to 1958.

RESULTS :

(i) 810 lb./ac. (ii) 168.7 lb./ac. (iii) Effects of N and P are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	650	790	930	675	773	922	790
K_1	749	839	864	741	847	864	817
K_2	683	847	938	675	880	913	823
Mean	694	825	911	697	833	900	810
N_0	618	675	798				
N_1	699	871	930				
N_2	765	930	1004				

No. of trials = 6.

Serial no. : 4. **Block (Dist.) :** Lokahai (Darbhanga). **Soil type :** Sandy loam. **Years :** 1957 to 1959.

RESULTS :

(i) 1193 lb./ac. (ii) 140.4 lb./ac. (iii) Effects of N and P are highly significant. Effect of K is significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1037	1168	1260	889	1185	1391	1155
K_1	1078	1209	1334	938	1251	1432	1207
K_2	1119	1193	1341	880	1284	1489	1218
Mean	1078	1190	1312	902	1240	1437	1193
N_0	782	905	1020				
N_1	1121	1250	1349				
N_2	1331	1415	1566				

No. of trials = 8.

Serial no. : 5. **Block (Dist.) :** Tajpur (Darbhanga). **Soil type :** Clayey loam. **Years :** 1957 to 1959.

RESULTS :

(i) 1634 lb./ac. (ii) 185.1 lb./ac. (iii) Effects of N, P and K are highly significant. Interaction N×P is significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1308	1497	1737	1226	1440	1876	1514
K_1	1522	1646	1826	1440	1563	1991	1665
K_2	1530	1769	1868	1481	1654	2032	1722
Mean	1453	1637	1810	1382	1552	1966	1634
N_0	1226	1399	1522				
N_1	1350	1612	1695				
N_2	1784	1901	2214				

No. of trials = 7.

Serial no. : 6. **Block (Dist.) :** Hajipur (Muzaffarpur). **Soil type :** Sandy loam. **Years :** 1956 to 1959.

RESULTS :

(i) 1562 lb./ac. (ii) 160.5 lb./ac. (iii) Effects of N and P are highly significant and effect of K is significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1399	1506	1661	1341	1489	1736	1522
K_1	1440	1580	1761	1473	1588	1720	1594
K_2	1423	1563	1721	1399	1572	1736	1569
Mean	1421	1550	1714	1404	1550	1731	1562
N_0	1235	1415	1563				
N_1	1431	1531	1687				
N_2	1596	1703	1893				

No. of trials = 10.

Serial no. : 7. **Block (Dist.) :** Lalganj (Muzaffarpur). **Soil type :** Sandy loam. **Years :** 1956 to 1959.

RESULTS :

(i) 1291 lb./ac. (ii) 111.6 lb./ac. (iii) Effects of N and P are highly significant. Effect K is significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1045	1316	1441	1012	1284	1506	1267
K_1	1078	1358	1464	1053	1333	1514	1300
K_2	1094	1308	1515	1070	1341	1506	1306
Mean	1072	1327	1473	1045	1319	1509	1291
N_0	815	1094	1226				
N_2	1111	1358	1489				
N_2	1291	1530	1705				

No. of trials = 12.

Serial no. : 8. **Block (Dist.) :** Baniapur (Saran). **Soil type :** Sandy loam. **Years :** 1956 to 1958.

RESULTS :

(i) 1346 lb./ac. (ii) 303.0 lb./ac. (iii) Effects of N, P and K are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	954	1358	1415	954	1308	1465	1242
K_1	1300	1415	1530	1119	1522	1604	1415
K_2	1259	1465	1415	1111	1473	1555	1380
Mean	1171	1413	1453	1061	1434	1541	1346
N_0	946	1103	1135				
N_1	1201	1588	1514				
N_2	1366	1547	1711				

No. of trials = 6.

Serial no. : 9. **Block (Dist.) :** Bhore (Saran). **Soil type :** Sandy loam. **Years :** 1956 to 1959.

RESULTS:

(i) 1307 lb./ac. (ii) 219.3 lb./ac. (iii) Effects of N, P, K, and interaction N×P are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	948	1218	1374	847	1226	1465	1179
K_1	1061	1341	1680	1037	1325	1720	1361
K_2	1144	1341	1661	1020	1423	1703	1382
Mean	1050	1300	1572	968	1325	1629	1307
N_0	690	1029	1185				
N_1	1119	1349	1506				
N_2	1342	1522	2024				

No. of trials = 10.

Serial no. : 10. **Block (Dist.) :** Chapra Sadar (Saran). **Soil type :** Sandy loam. **Years : 1956 to 1959.**

RESULTS :

(i) 1509 lb./ac. (ii) 228.8 lb./ac. (iii) Effects of N, P and K are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1251	1456	1638	1152	1473	1720	1448
K_1	1374	1539	1703	1341	1539	1736	1539
K_2	1341	1572	1711	1259	1588	1777	1541
Mean	1322	1532	1684	1251	1533	1744	1509
N_0	1045	1234	1473				
N_1	1341	1564	1695				
N_2	1580	1769	1884				

No. of trials = 12.

Serial no. : 11. **Block (Dist.) :** Ekma (Saran). **Soil type :** Sandy loam. **Years :** 1956 to 1959.

RESULTS :

(i) 1782 lb./ac. (ii) 346.8 lb./ac. (iii) Effects of N and P are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1415	1802	2008	1185	1728	2312	1742
K_1	1456	1819	2131	1226	1810	2370	1802
K_2	1481	1860	2065	1218	1876	2312	1802
Mean	1451	1827	2068	1210	1805	2331	1782
N_0	964	1168	1497				
N_1	1439	1910	2065				
N_2	1949	2403	2642				

No. of trials = 12.

Serial no. : 12. **Block (Dist.) :** Garkha (Saran). **Soil type :** Loam. **Years :** 1957 to 1959.

RESULTS :

(i) 1564 lb./ac. (ii) 121.3 lb./ac. (iii) Effects of N and P are highly significant. Effect of K is significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1358	1497	1688	1284	1473	1786	1514
K_1	1374	1539	1720	1341	1506	1786	1544
K_2	1382	1572	1945	1558	1547	1794	1633
Mean	1371	1536	1784	1394	1509	1789	1564
N_0	1394	1300	1489				
N_1	1342	1514	1670				
N_2	1378	1794	2194				

No. of trials = 8.

Serial no. : 13. **Block (Dist.) :** Guthani (Saran). **Soil type :** Sandy loam. **Years :** 1957 to 1959.

RESULTS :

(i) 1661 lb./ac. (ii) 167.9 lb./ac. (iii) Effects of N, P and K are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1465	1613	1703	1448	1580	1753	1594
K_1	1547	1670	1827	1563	1687	1794	1681
K_2	1539	1761	1826	1539	1736	1851	1709
Mean	1517	1681	1785	1517	1668	1799	1661
N_0	1391	1497	1662				
N_1	1546	1696	1761				
N_2	1614	1851	1933				

No. of trials = 8.

Serial no. : 14. **Block (Dist.) :** Maharajganj (Saran). **Soil type :** Sandy loam. **Years :** 1956 to 1959.

RESULTS :

(i) 1337 lb./ac. (ii) 108.2 lb./ac. (iii) Effects of N, P and interaction N×P are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1209	1358	1408	1103	1284	1588	1325
K_1	1234	1316	1424	1119	1308	1547	1325
K_2	1292	1341	1447	1135	1341	1604	1360
Mean	1245	1338	1426	1119	1311	1580	1337
N_0	1036	1144	1177				
N_1	1243	1308	1382				
N_2	1456	1563	1720				

No. of trials = 10.

Serial no. : 15. **Block (Dist) :** Manjhi (Saran). **Soil type :** Loam. **Years :** 1957 to 1959.

RESULTS :

(i) 1561 lb./ac. (ii) 130.8 lb./ac. (iii) Effects of N, P, K and interaction $N \times P$ are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1292	1481	1687	1226	1481	1753	1487
K_1	1358	1588	1810	1292	1580	1884	1585
K_2	1380	1613	1837	1325	1555	1950	1610
Mean	1343	1561	1778	1281	1539	1862	1561
N_0	1119	1251	1473				
N_1	1358	1538	1720				
N_2	1553	1893	2141				

No. of trials = 8.

Serial no. : 16. **Block (Dist) :** Mirganj (Saran). **Soil type :** Loam. **Years :** 1956 to 1959.

RESULTS :

(i) 1753 lb./ac. (ii) 186.0 lb./ac. (iii) Effects of N, P and K are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1506	1736	1810	1366	1670	2016	1684
K_1	1662	1761	1892	1423	1753	2139	1772
K_2	1637	1860	1909	1497	1786	2123	1802
Mean	1602	1786	1870	1429	1736	2093	1753
N_0	1283	1481	1522				
N_1	1621	1737	1851				
N_2	1901	2139	2238				

No. of trials = 10.

Serial no : 17. **Block (Dist.) :** Raghunathpur (Saran). **Soil type :** Clayey. **Years :** 1957 to 1959.

RESULTS :

(i) 2100 lb./ac. (ii) 231.2 lb./ac. (iii) Effects of N, P and interaction $N \times P$ are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1827	2041	2237	1810	2041	2254	2035
K_1	1925	2107	2288	1925	2107	2288	2107
K_2	1967	2189	2319	1958	2172	2345	2158
Mean	1906	2112	2281	1898	2107	2296	2100
N_0	1587	1967	2139				
N_1	1982	2125	2213				
N_2	2150	2245	2492				

No. of trials = 7.

Serial no. : 18. **Block (Dist.) :** Siwan (Saran). **Soil type :** Sandy loam. **Years :** 1956 to 1959.

RESULTS :

(i) 1606 lb./ac. (ii) 181.9 lb./ac. (iii) Effects of N, P, K and interaction N×P are highly significant. (iv) **Av.** yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1349	1530	1745	1275	1465	1884	1541
K_1	1473	1596	1794	1316	1547	2000	1621
K_2	1448	1629	1893	1358	1596	2016	1657
Mean	1423	1585	1811	1316	1536	1967	1606
N_0	1094	1267	1588				
N_1	1424	1530	1654				
N_2	1752	1958	2190				

No. of trials = 10.

II. UNIRRIGATED TRIALS

Serial no. : 1. **Block (Dist.) :** Bagoha (Champaran). **Soil type :** Clayey. **Years :** 1956 to 1959.

RESULTS :

(i) 984 lb./ac. (ii) 122.6 lb./ac. (iii) Effects of N, P and K are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	831	954	1037	798	946	1078	941
K_1	905	987	1054	839	996	1111	982
K_2	930	1070	1085	864	1061	1160	1028
Mean	889	1004	1059	834	1001	1116	984
N_0	765	847	889				
N_1	880	1045	1078				
N_2	1021	1119	1209				

No. of trials = 8.

Serial no. : 2. **Block (Dist.) :** Govindganj (Champaran). **Soil type :** Loam. **Years :** 1956 to 1959.

RESULTS :

(i) 982 lb./ac. (ii) 121.0 lb./ac. (iii) Effects of N, P and K are highly significant. Interaction N×K is significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	880	905	1005	782	930	1078	930
K_1	897	996	1093	880	1045	1061	995
K_2	905	1053	1103	889	1020	1152	1020
Mean	894	985	1067	850	998	1097	982
N_0	790	831	930				
N_1	864	1037	1094				
N_2	1028	1086	1177				

No. of trials = 8.

Serial no. : 3. **Block (Dist.) :** Madhuban (Champaran). **Soil type :** Sandy loam. **Years : 1956 to 1958.**

RESULTS :

(i) 780 lb./ac. (ii) 97.1 lb./ac. (iii) Effects of N and P are highly significant. Effects of K and interaction P×K are significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	658	732	865	609	741	905	752
K_1	716	757	889	650	782	930	787
K_2	658	839	905	617	831	954	801
Mean	677	776	886	625	785	930	780
N_0	510	609	757				
N_1	717	765	872				
N_2	805	954	1030				

No. of trials = 6.

Serial no. : 4. **Block (Dist.) :** Motihari (Champaran). **Soil type :** Sandy loam. **Years : 1956 to 1959.**

RESULTS :

(i) 1101 lb./ac. (ii) 192.4 lb./ac. (iii) Effects of N, P and K are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	856	1029	1118	806	1053	1144	1001
K_1	971	1185	1332	847	1275	1366	1163
K_2	922	1226	1266	847	1218	1349	1138
Mean*	916	1147	1239	833	1182	1286	1101
N_0	698	872	930				
N_1	1003	1210	1333				
N_2	1048	1358	1453				

No. of trials = 9.

Serial no. : 5. **Block (Dist.) :** Pattahi (Champaran). **Soil type :** Clayey. **Years : 1957 to 1959.**

RESULTS :

(i) 871 lb./ac. (ii) 114.1 lb./ac. (iii) Effects of N, P and K are highly significant. Interaction of P×K is significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	601	806	1102	609	806	1094	836
K_1	658	872	1153	667	889	1127	894
K_2	675	913	1062	642	905	1103	883
Mean	645	864	1106	639	867	1108	871
N_0	429	625	864				
N_1	642	880	1078				
N_2	863	1086	1375				

No. of trials = 7.

Serial no. : 6. **Block (Dist) :** Ramnagar (Champaran). **Soil type :** Sandy. **Years :** 1957 to 1959.

RESULTS :

(i) 1215 lb./ac. (ii) 115.2 lb./ac. (iii) Effects of N, P, K and interaction N×P are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1020	1168	1243	872	1103	1456	1144
K_1	1168	1267	1358	1045	1201	1547	1264
K_2	1168	1251	1292	1045	1144	1522	1237
Mean	1119	1229	1298	987	1149	1508	1215
N_0	823	1012	1127				
N_1	1095	1160	1193				
N_2	1438	1514	1573				

No. of trials = 8.

Serial no. : 7. **Block (Dist.) :** Benipatti (Darbhanga). **Soil type :** Loam. **Years :** 1956 to 1959.

RESULTS :

(i) 921 lb./ac. (ii) 189.3 lb./ac. (iii) Effects of N and P are higly significant. Effect of K is significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	790	938	921	699	913	1037	883
K_1	864	987	996	757	996	1094	949
K_2	872	946	979	773	987	1037	932
Mean	842	957	965	743	965	1056	921
N_0	674	757	798				
N_1	906	1003	987				
N_2	946	1111	1111				

No. of trials = 12.

Serial no. : 8. **Block (Dist.) :** Dalsingsarai (Darbhanga). **Soil type :** Loam. **Years :** 1956 to 1959.

RESULTS :

(i) 1423 lb./ac. (ii) 303.9 lb./ac. (iii) Effects of N and P are highly significant. Effect of K and interaction N×P are significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1218	1349	1515	1103	1391	1588	1361
K_1	1168	1489	1663	1078	1456	1786	1440
K_2	1259	1440	1703	1209	1473	1720	1467
Mean	1215	1426	1627	1130	1440	1698	1423
N_0	897	1127	1366				
N_1	1284	1489	1547				
N_2	1464	1662	1968				

No. of trials = 12.

Serial no. : 9. **Block (Dist.) :** Darbhanga Sadar (Darbhanga). **Soil type :** Loam. **Years :** 1956 to 1959.

RESULTS :

(i) 1293 lb./ac. (ii) 318.4 lb./ac. (iii) Effects of N, P, and K are highly significant. Interaction N×P is significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1037	1259	1365	1037	1209	1415	1220
K_1	1201	1374	1449	1185	1358	1481	1341
K_2	1127	1358	1465	1103	1325	1522	1317
Mean	1122	1330	1426	1108	1297	1473	1293
N_0	997	1119	1209				
N_1	1152	1358	1382				
N_2	1216	1514	1688				

No. of trials = 15.

Serial no. : 10. **Block (Dist.) :** Jainagar (Darbhanga). **Soil type :** Loam. **Years :** 1957 to 1959.

RESULTS :

(i) 695 lb./ac. (ii) 124.5 lb./ac. (iii) Effects of N×P and are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	560	650	831	568	650	823	680
K_1	576	691	847	551	658	905	705
K_2	560	691	848	568	667	864	700
Mean	565	677	842	562	658	864	695
N_0	428	543	716				
N_1	528	674	773				
N_2	740	815	1037				

No. of trials = 10.

Serial no. : 11. **Block (Dist.) :** Samastipur (Darbhanga). **Soil type :** Loam. **Years :** 1956 to 1959.

RESULTS :

(i) 1573 lb./ac. (ii) 246.3 lb./ac. (iii) Effects of N and P are highly significant. Effect of K is significant. (iv) Av. yield of grain lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1358	1596	1621	1325	1497	1753	1525
K_1	1382	1613	1794	1374	1621	1794	1596
K_2	1415	1604	1778	1407	1588	1802	1599
Mean	1385	1604	1731	1369	1569	1783	1573
N_0	1169	1407	1530				
N_1	1390	1563	1753				
N_2	1596	1843	1910				

No. of trials = 16.

Serial no. : 12. **Block (Dist.) :** Warisnagar (Darbhanga). **Soil type :** Loam. **Years :** 1957 to 1959

RESULTS :

(i) 1741 lb./ac. (ii) 247.5 lb./ac. (iii) Effects of N, P, K and interaction N×P are highly significant. (iv) Av yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1489	1596	1811	1300	1646	1950	1632
K_1	1637	1712	1999	1497	1744	2107	1783
K_2	1695	1810	1917	1530	1744	2148	1807
Mean	1607	1706	1909	1442	1711	2068	1741
N_0	1233	1465	1629				
N_1	1679	1678	1777				
N_2	1909	1975	2321				

No. of trials = 10.

Serial no. : 13. **Block (Dist.) :** Mahna (Muzaffarpur). **Soil type :** Loam. **Years :** 1956 to 1959.

RESULTS :

(i) 1052 lb./ac. (ii) 82.7 lb./ac. (iii) Effects of N, P and K are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	823	1045	1111	823	979	1177	993
K_1	922	1094	1242	905	1094	1259	1086
K_2	930	1111	1193	905	1078	1251	1078
Mean	892	1083	1182	878	1050	1229	1052
N_0	708	913	1012				
N_1	896	1095	1160				
N_2	1071	1242	1374				

No. of trials = 8.

Serial no. : 14. **Block (Dist.) :** Runisaidpur (Muzaffarpur). **Soil type :** Loam. **Years :** 1956 to 1959.

RESULTS :

(i) 830 lb./ac. (ii) 95.6 lb./ac. (iii) Effects of N, P, K and interaction N×P are highly significant. Interaction N×K is significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	683	831	889	716	823	864	801
K_1	757	880	930	724	905	938	856
K_2	749	806	946	699	856	946	834
Mean	730	839	922	713	861	916	830
N_0	642	732	765				
N_1	766	888	930				
N_2	781	897	1070				

No. of trials = 10.

Serial no. : 15. **Block (Dist.) :** Sakra (Muzaffarpur). **Soil type :** Loam. **Years :** 1956 to 1959.

RESULTS :

(i) 551 lb./ac. (ii) 88.0 lb./ac. (iii) Effects of N, P and K are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	477	502	543	469	502	551	507
K_1	527	609	584	494	617	609	573
K_2	518	568	634	510	609	601	573
Mean	507	560	587	491	576	587	551
N_0	445	510	518				
N_1	526	585	617				
N_2	551	584	626				

No. of trials = 8.

Serial no. : 16. **Block (Dist.) :** Sonebersa (Muzaffarpur). **Soil type :** Clayey loam. **Years :** 1957 to 1959.

RESULTS :

(i) 1797 lb./ac. (ii) 376.3 lb./ac. (iii) Effects of N, P and K are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1267	1703	2049	1226	1695	2098	1673
K_1	1399	1810	2205	1366	1777	2271	1805
K_2	1514	1884	2346	1572	1950	2222	1915
Mean	1393	1799	2200	1388	1807	2197	1797
N_0	1061	1391	1712				
N_1	1449	1784	2189				
N_2	1670	2222	2699				

No. of trials = 6.

Serial no. : 17. **Block (Dist.) :** Basantpur (Saran). **Soil type :** Loam. **Years :** 1957 to 1959.

RESULTS :

(i) 1044 lb./ac. (ii) 97.9 lb./ac. (iii) Effects of N, P, K and interaction N×K are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	905	1029	1086	856	1004	1160	1007
K_1	963	1086	1127	856	1061	1259	1059
K_2	938	1127	1136	864	1078	1259	1067
Mean	935	1081	1116	859	1048	1226	1044
N_0	766	872	938				
N_1	937	1128	1078				
N_2	1103	1242	1333				

No. of trials = 8.

Serial no. : 18. **Block (Dist.) :** Gopalganj (Saran). **Soil type :** Loam. **Years :** 1956 to 1959.

RESULTS :

(i) 1686 lb./ac. (ii) 189.8 lb./ac. (iii) Effects of N, P, K and interaction N×P are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1366	1621	1761	1185	1613	1950	1583
K_1	1514	1827	1958	1349	1835	2115	1766
K_2	1456	1786	1885	1333	1753	2041	1709
Mean	1445	1745	1868	1289	1734	2035	1686
N_0	1086	1349	1432				
N_1	1489	1828	1884				
N_2	1761	2057	2288				

No. of trials = 12.

Serial no. : 19. **Block (Dist.) :** Kuchaikot (Saran). **Soil type :** Loam. **Years :** 1956 to 1959.

RESULTS :

(i) 1537 lb./ac. (ii) 169.6 lb./ac. (iii) Effects of N, P, K and interaction N×P are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1275	1497	1638	1061	1539	1810	1470
K_1	1423	1563	1645	1144	1512	1975	1544
K_2	1407	1703	1679	1177	1654	1958	1596
Mean	1368	1588	1654	1127	1568	1914	1537
N_0	964	1209	1209				
N_1	1389	1670	1646				
N_2	1752	1884	2107				

No. of trials = 8.

ZONE IV

TREATMENTS :

All combinations of (1), (2) and (3)
- (1) Levels of N as A/S : $N_0=0$, $N_1=20$, $N_2=40$ lb./ac.
- (2) Levels of P_2O_5 as Super : $P_0=0$, $P_1=25$, $P_2=50$ lb./ac.
- (3) Levels of K_2O as Mur. Pot. : $K_0=0$, $K_1=20$, $K_2=40$ lb./ac.

UNIRRIGATED TRIALS

Serial no. : 1. **Block (Dist.) :** Farbisganj (Purnea). **Soil type :** Sandy loam. **Years :** 1956 to 1958.

RESULTS :

(i) 914 lb./ac. (ii) 96.3 lb./ac. (iii) Effects of N, P and K, are highly significant. Interaction N×P is significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	806	889	914	749	864	996	870
K_1	880	930	971	782	938	1061	927
K_2	880	954	997	815	930	1086	944
Mean	855	924	961	782	911	1048	914
N_0	725	806	815				
N_1	880	930	922				
N_2	961	1037	1145				

No. of trials = 7.

Seria lno. : 2. **Block (Dist.) :** Kishanganj (Purnea). **Soil type :** Sandy. **Years :** 1957 to 1959.

RESULTS :

(i) 1212 lb./ac. (ii) 184.3 lb./ac. (iii) Effects of N, P and K are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	987	1119	1234	987	1185	1168	1113
K_1	1045	1300	1448	1135	1366	1292	1264
K_2	1037	1308	1432	1127	1325	1325	1259
Mean	1023	1242	1371	1083	1292	1262	1212
N_0	879	1111	1259				
N_1	1087	1300	1489				
N_2	1103	1316	1366				

No. of trials = 8.

Serial no. : 3. **Block (Dist.)** Narpatganj (Purnea). **Soil type :** Sandy. **Years :** 1956 to 1959.

RESULTS :

(i) 787 lb./ac. (ii) 79.8 lb./ac. (iii) Effects of N, P and K are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	625	790	799	634	749	831	738
K_1	658	831	922	708	806	897	804
K_2	675	864	914	741	823	889	818
Mean	653	828	878	694	793	872	787
P_0	545	732	806				
P_1	658	823	897				
P_2	755	930	932				

No. of trials = 9.

Serial no. : 4. **Block (Dist.) :** Raniganj (Purnea). **Soil type :** Sandy. **Years :** 1957 to 1959.

RESULTS :

(i) 1006 lb./ac. (ii) 128.5 lb./ac. (iii) Effects of N and P are highly significant. Effects of K and interaction N×K are significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	889	1004	1028	938	946	1037	974
K_1	930	1029	1053	930	1004	1078	1004
K_2	946	1037	1136	922	996	1201	1040
Mean	922	1023	1072	930	982	1105	1006
N_0	848	930	1012				
N_1	896	1005	1045				
N_2	1021	1135	1160				

No. of trials = 6.

ZONE V

TREATMENTS :

All combinations of (1), (2) and (3)

(1) Levels of N as A/S : $N_0=0$, $N_1=20$, $N_2=40$ lb./ac.
(2) Levels of P_2O_5 as Super : $P_0=0$, $P_1=20$, $P_2=40$ lb./ac.
(3) Levels of K_2O as Mur. Pot. : $K_0=0$, $K_1=25$, $K_2=50$ lb./ac.

I. UNIRRIGATED TRIALS.

Serial no. : 1. **Block (Dist.) :** Bariarpur (Monghyr). **Soil type :** Loam. **Years :** 1957 to 1959.

RESULTS :

(i) 2319 lb./ac. (ii) 183.1 lb./ac. (iii) Effects of N, P, K and interaction N×P are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1967	2213	2452	1802	2139	2691	2211
K_1	2107	2345	2707	1925	2403	2831	2386
K_2	2115	2353	2609	1934	2296	2847	2359
Mean	2063	2304	2589	1887	2279	2790	2319
N_0	1654	1909	2098				
N_1	2091	2254	2493				
N_2	2444	2748	3177				

No. of trials = 8.

Serial no. : 2. **Block (Dist.) :** Teghra (Monghyr). **Soil type :** Loam. **Years :** 1956, 1958 and 1959.

RESULTS :

(i) 1108 lb./ac. (ii) 142.0 lb./ac. (iii) Effects of N, P and K are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	905	1070	1143	856	1053	1209	1039
K_1	996	1127	1283	954	1185	1267	1135
K_2	987	1152	1308	979	1160	1308	1149
Mean	963	1116	1245	930	1133	1261	1108
N_0	789	963	1037				
N_1	995	1152	1251				
N_2	1104	1234	1446				

No. of trials = 5.

* * *

Serial no. : 1. **Block (Dist.) :** Banmanki (Purnea). **Soil type :** Sandy. **Years :** 1956, 1957 and 1959.

RESULTS :

(i) 619 lb./ac. (ii) 41.9 lb./ac. (iii) Effects of N, P and K are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	551	601	642	494	601	699	598
K_1	560	625	674	502	625	732	620
K_2	584	642	692	527	650	741	639
Mean	565	623	669	508	625	724	619
N_0	470	510	543				
N_1	559	626	691				
N_2	666	732	774				

No. of trials = 7.

* * *

Serial no. : 2. **Block (Dist.) :** Katihar (Purnea). **Soil type :** Sandy. **Years :** 1956 to 1959.

RESULTS :

(i) 1160 lb./ac. (ii) 242.4 lb./ac. (iii) Effects of N, P and K are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	872	1078	1316	905	1094	1267	1089
K_1	954	1119	1374	971	1168	1308	1149
K_2	1012	1242	1473	1053	1267	1407	1242
Mean	946	1146	1388	976	1176	1327	1160
N_0	782	938	1209				
N_1	978	1185	1366				
N_2	1078	1316	1588				

No. of trials = 17.

Serial no. : 3. **Block (Dist.) :** Purnea Sadar (Purnea). **Soil type :** Sandy. **Years :** 1956, 1958 and 1959.

RESULTS :

(i) 557 lb./ac. (ii) 102.0 lb./ac. (iii) Effects of N and P are highly significant. Effect of K and interaction P×K are significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	469	535	584	461	535	592	529
K_1	477	592	634	527	551	625	568
K_2	518	601	601	510	568	642	573
Mean	488	576	606	499	551	620	557
N_0	420	535	543				
N_1	486	592	576				
N_2	558	601	700				

No. of trials = 9.

— — — —

Serial no. : 4. **Block (Dist.) :** Alamnagar (Saharsa). **Soil type :** Sandy loam. **Years :** 1956 to 1959.

RESULTS :

(i) 825 lb./ac. (ii) 154.7 lb./ac. (iii) Effects of N, P and K are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	699	773	816	683	741	864	763
K_1	732	790	930	691	815	946	817
K_2	806	897	979	732	897	1053	894
ean M	746	820	908	702	818	954	825
N_0	666	691	749				
N_1	733	831	889				
N_2	838	938	1087				

No. of trials = 8.

— — —

Serial no. : 5. **Block (Dist.) :** Madhepura (Saharsa). **Soil type :** Sandy loam. **Years :** 1957 to 1959.

RESULTS :

(i) 958 lb./ac. (ii) 183. 2 lb./ac. (iii) Effects of N, P and K are highly significant. (iv) Av. yield of grain in lb /ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	806	847	1013	757	930	979	889
K_1	856	996	1027	839	987	1053	960
K_7	897	1061	1119	864	1078	1135	1026
Mean	853	968	1053	820	998	1056	958
N_0	732	823	905				
N_1	889	1020	1086				
N_2	938	1061	1168				

No. of trials = 10.

Serial no. : 6. **Block (Dist.) :** Supaul (Saharsa). **Soil type :** Sandy loam. **Years :** 1956 to 1959.

RESULTS :

(i) 774 lb./ac. (ii) 114.4 lb./ac. (iii) Effects of N, P, K and interactions N×K and P×K are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	667	716	765	642	716	790	716
K_1	642	823	914	634	856	889	793
K_2	691	847	905	683	880	880	814
Mean	667	795	861	653	817	853	774
N_0	593	642	724				
N_1	675	872	905				
N_2	732	872	955				

No. of trials = 9.

Serial no. : 7. **Block (Dist.) :** Uda Kishanganj (Saharsa). **Soil type :** Sandy loam. **Years :** 1956 to 1959.

RESULTS :

(i) 477 lb./ac. (ii) 71.7 lb./ac. (iii) Effects of N, P, K and interaction N×P are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	395	477	519	387	502	502	464
K_1	395	518	543	411	510	535	485
K_2	403	510	535	403	518	527	483
Mean	398	502	532	400	510	521	477
N_0	353	420	428				
N_1	404	558	568				
N_2	436	527	601				

No. of trials = 16.

Crop :- Wheat. **Ref :- Bh. 55(43).**

Site :- Naya Dumka Farm, Dumka. **Type :- 'C'.**

Object :—To study the use of intermediate crops in Maize—Wheat rotation.

1. BASAL CONDITIONS :

(i) (a) and (b) As per treatments. (c) 30 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy loam. (b) N.A. (iii) 6.11.1955. (iv) (a) 1 tractor ploughing and 3 *desi* ploughings. (b) N.A. (c) 40 srs./ac. (d) and (e) N.A. (v) Nil. (vi) BR—319 (early). (vii) Unirrigated. (viii) Weeding and interculturing. (ix) 4.82". (x) 2 3.1956.

2. TREATMENTS :

1. Maize+Wheat.
2. Maize+*Kalai* (fodder)—Wheat.
3. Maize+*Kalai* (G.M.)—Wheat.
4. Maize+*Moong* (fodder)—Wheat.
5. Maize+*Moong* (G.M.)—Wheat.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) and (b) 33′×16.5′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Poor ; no lodging. (ii) Heavy termite attack—Aldrin sprayed. (iii) Grain and straw yield, date of flowering. (iv) (a) 1955—N.A. (b) and (c) N.A. (v) (a) All Govt. Farms. (b) N.A. (vi) and (vi) Nil.

5. RESULTS :

(i) 519 lb./ac. (ii) 200.4 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5
Av. yield	596	674	596	329	398

S.E./mean = 100.2 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 58(5).**

Site :-Agri. Res. Instt., Kanke. **Type :- 'C'.**

Object :—To find suitable cropping pattern with Maize—Wheat rotation.

1. BASAL CONDITIONS .

(i) (a) and (b) As per treatments. (c) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy loam. (b) Refer soil analysis, Kanke. (iii) 7.10.1958. (iv) (a) 3 ploughings followed by beaming. (b) Behind the plough. (c) 40 srs /ac. (d) 1′ between rows. (e) —. (v) 20 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super at the time of sowing. (vi) NP—798. (vii) Irrigated. (viii) 4 hoeings. (ix) 4.5″. (x) 23 to 25.2.1959.

2. TREATMENTS :

1. Maize—Wheat.
2. Maize+Groundnut—Wheat.
3. Maize+Cowpea—Wheat.
4. Maize+*Kalai*—Wheat.
5. Maize+*Moong*—Wheat.
6. Maize+*Dhaincha*—Wheat.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) 162′×44′. (iii) 4. (iv) (a) and (b) 44′×25′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield and tiller number. (iv) (a) 1958—1960. (b) No. (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 869.8 lb./ac. (ii) 119.7 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5	6
Av. yield	695	898	1030	875	848	872

S.E./mean = 59.9 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref:- Bh. 58(43).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'C'.**

Object :—To find suitable cropping pattern with Maize—Wheat rotation.

1. BASAL CONDITIONS :

(i) (a) and (b) As per treatments. (c) 40 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super. (ii) (a) Clayey loam. (b) Refer soil analysis, Kanke. (iii) 23.11.1958 and 7.12.1958. (iv) (a) 4 ploughings. (b) Behind the plough. (c) 80 lb./ac. (d) 10″ between rows. (e) —. (v) 20 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super in furrows at sowing. (vi) NP—798. (vii) Irrigated. (viii) Hoeing and weeding. (ix) About 2.0″ (x) 29.3.1958.

2. TREATMENTS to 4. GENERAL

Same as in expt. no. 58(5) on page 363.

5. RESULTS :

(i) 861 lb./ac. (ii) 116.8 lb./ac. (iii) Treatment differences are signinficant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5	6
Av. yield	691	872	1029	880	839	856

S.E./mean = 58.4 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 59(19).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'C'.**

Object :—To find suitable cropping pattern with Maize—Wheat rotation.

1. BASAL CONDITIOS :

(i) (a) and (b) As per treatments. (c) 40 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super. (ii) (a) Clayey. (b) Refer soil analysis, Kanke. (iii) 25 to 27.11.1959. (iv) (a) 4 ploughings. (b) Behind the plough. (c) 80 lb./ac. (d) 10″ between rows. (e) —. (v) 20 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super at sowing in furrows. (vi) NP—798. (vii) Irrigated. (viii) Hoeing and weeding. (ix) 1.0″. (x) 28.3.1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(5) on page 363.

5. RESULTS :

(i) 947 lb./ac. (ii) 134.9 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5	6
Av. yield	885	945	917	900	848	1186

S.E./mean = 67.5 lb /ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 57(16).**

Site :- Govt. Agri. Farm, Musheri. **Type :- 'C'.**

Object :—To study the use of intermediate crops in Maize-Wheat rotation.

1. BASAL CONDITIONS :

(i) (a) and (b) As per treatments. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 12.11.1957. (iv) (a) 3 ploughings. (b) Line sowings. (c) 40 srs./ac. (d) N.A. (e) —. (v) Nil. (vi) NP—758 (medium). (vii) Irrigated. (viii) Hoeing and earthing. (ix) 2.0″. (x) 7.4.1958.

2. TREATMENTS :

Same as in expt. no. 55(43) on page 362.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) 168′×174′. (iii) 4. (iv) (a) 42.5′×29′. (b) 40.5′×27′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Attack of rust. (iii) Grain yield. (iv) (a) 1956—1958. (b) and (c) No. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 765.2 lb./ac. (ii) 184.1 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5
Av. yield	720	823	699	720	864

S.E./mean = 92.1 lb./ac.

Crop :- Wheat ***(Rabi)*****.** **Ref :- Bh. 58(9).**

Site :- Govt. Agri. Farm, Musheri. **Type :- 'C'.**

Object :—To study the use of intermadiate crops in Maize—Wheat rotation.

1. BASAL CONDITIONS :

(i) (a) and (b) As per treatments. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 13.11.1958. (iv) (a) 3 ploughings. (b) Behind the plough. (c) N.A. (d) 1′ between rows. (e) —. (v) 40 lb./ac. of $\frac{1}{2}$N as A/S+40 lb./ac. of P_2O_5 as Super $\frac{1}{2}$ at sowing and $\frac{1}{2}$ at planting of maize. (vi) NP—799. (vii) Irrigated. (viii) Hoeing, weeding and earthing. (ix) 4.28″. (x) 6.4.1959.

2. TREATMENTS :

Same as in expt. no. 55(43) on page 362.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) 210′×116′. (iii) 4. (iv) (a) 42′×29′. (b) 40′×27′. (v) 1′×1′. (vi) Yes.

4. DESIGN :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1956—1958. (b) No. (c) None. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 567.7 lb./ac. (ii) 130.0 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb/ac.

Treatment	1	2	3	4	5
Av. yield	473	514	658	596	596

S.E./mean = 65.0 lb./ac.

Crop :- Wheat ***(Rabi)*****.** **Ref :- Bh. 59(25).**

Site :- Govt. Agri. Farm, Musheri. **Type :- 'C'.**

Object :—To find suitable cropping pattern with maize—Wheat rotation.

1. BASAL CONDITIONS :

(i) (a) and (b) As per treatments. (c) 20 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy loam. (b) N.A. (iii) 24.11.1959. (iv) (a) 4 ploughings by Bihar plough. (b) Behind plough. (c) 40 srs./ac. (d) 10″ between rows. (e) —. (v) 40 lb./ac. of N as A/S at the time of sowing. (vi) NP—758. (vii) Irrigated. (viii) 2 Hoeings and weedings. (ix) 8.65″. (x) 2 and 3.4.1960.

2. TREATMENTS :

Same as in expt. no. 58(5) on page 363.

3. DESIGN

(i) R.B.D. (ii) (a) 6. (b) 144′×142′. (iii) 4. (iv) (a) and (b) 33′×22′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Attack by rust—control measures N.A. (iii) Grain yield. (iv) (a) 1959—1960. (b) No. (c) Nil. (v) (a) Kanke and Putida. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1188 lb./ac. (ii) 321 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5	6
Av. yield	1334	1304	1095	1350	1057	987

S.E./mean = 160.5 lb./ac.

Crop :- Wheat ***(Rabi).*** **Ref :- Bh. 57(23).**

Site :- Govt. Agri. Farm, Musheri. **Type :- 'C'.**

Object :—To find out the best method of sowing Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Potato. (c) F.Y.M. (quantity—N.A.) (ii) (a) Sandy loam. (b) N.A. (iii) 25.11.1957. (iv) (a) 4 ploughings. (b) As per treatments. (c) For M_1, 40 srs./ac. and for M_2 30 srs./ac.. (d) 1′ between rows. (e) 1. (v) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super before sowing. (vi) NP—799 (medium). (vii) Irrigated. (viii) Hoeing and weeding. (ix) 1.14″. (x) 27.3.1958.

2. TREATMENTS :

2 methods of sowing : M_1=Dibbling and M_2=Behind the plough.

3. DESIGN :

(i) R.B.D. (ii) (a) 2. (b) 168′×30′. (iii) 4. (iv) (a) 15′×42′. (b) 13′6″×40′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain yield. (iv) (a) 1957—1959. (b). No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 432.0 lb./ac. (ii) 78.8 lb./ac. (iii) Treatment difference is not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2
Av. yield	370	494

S.E./mean = 39.4 lb./ac.

Crop :. Wheat ***(Rabi).*** **Ref :- Bh. 58(12).**

Site :- Govt. Agri. Farm, Musheri. **Type :- 'C'.**

Object :—To find out the best method of sowing Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) G.M. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 21 to 23.11.1958. (iv) (a) 3 ploughings. (b) As per treatments. (c) 40 srs./ac. (d) 1′ between rows. (e) —. (v) 16 srs./ac. of A/S+15 srs./ac. of Super. (vi) NP—799 (medium). (vii) Irrigated. (viii) Hoeing and weeding. (ix) 4.56″. (x) 7 to 9.4.1959.

2. TREATMENTS :

4 methods of sowing : M_1=Broadcast, M_2=Dibbling, M_3=Local and M_4=By seed drill.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) 284′×132′. (iii) 4. (iv) (a) N.A. (b) 31′×29′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) 1957—1959. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1702 lb./ac. (ii) 295.3 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3	M_4
Av. yield	1746	1546	1871	1646

S.E./mean = 147.6 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 56(189).**

Site :- Agri. Res. Instt., Patna. **Type :- 'C'.**

Object :—To study the effect of different ploughs on Wheat.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Heavy clay. (b) Refer soil analysis, Patna. (iii) 8.12.1956. (iv) (a) As per treatments. (b) Behind the plough. (c) 40 srs./ac. (d) 1′ between rows. (e) —. (v) 40 lb./ac. of N as A/S+30 lb./ac. of P_2O_5 as Super at sowing. (vi) NP—52. (vii) Irrigated. (viii) 1 weeding and hoeing (ix) 4.29″. (x) 15.4.1957.

2. TREATMENTS :

6 *desi* ploughs from different districts of State : D_1=Siwan, D_2=Sepaya, D_3=Sahebganj, D_4=Deoghar, D_5=Patna and D_6=Motihari.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 68′×32′ (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1956—N.A. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 533.7 lb./ac. (ii) 60.1 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	D_1	D_2	D_3	D_4	D_5	D_6
Av. yield	518	527	513	550	504	591

S.E./mean = 30.0 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 57(183).**

Site :- Agri. Res. Instt., Patna. **Type :- 'C'.**

Object :—To study the effect of different ploughs on Wheat.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Heavy clay. (b) Refer soil analysis, Patna. (iii) 30.11.1957. (iv) (a) As per treatments. (b) Behind the plough. (c) 40 srs./ac. (d) 1′ between rows. (e) —. (v) 40 lb./ac. of N as A/S+30 lb./ac. of P_2O_5 as Super at sowing. (vi) NP—52. (vii) Irrigated. (viii) 1 weeding and hoeing. (ix) 0.26″. (x) 12.4.1958.

2. TREATMENTS :

6 *desi* ploughs from different district of State. : D_1=Patna, D_2=Gaya, D_3=Shahabad, D_4=Bihar iron D_5=Baroda hoe and D_6=Japanese type.

3. DESIGN :

(i) R B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 30′×70′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1956—N.A. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1053 lb./ac. (ii) 120.5 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	D_1	D_2	D_3	D_4	D_5	D_6
Av. yield	1161	1043	979	1024	1030	1083

S.E./mean = 60.2 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 56(190).**

Site :- Agri. Res. Instt., Patna. **Type :- 'C'.**

Object :—To study the effect of different mould-board plough on Wheat.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Heavy clay. (b) Refer soil analysis, Patna. (iii) 30.11.1956. (iv) (a) As per treatments. (b) Behind the plough. (c) 40 srs./ac. (d) 1′ between rows. (e) —. (v) 40 lb./ac. of N as A/S+30 lb./ac. of P_2O_5 as Super at sowing. (vi) NP—52. (vii) Irrrigated. (viii) 1 weeding and hoeing. (ix) 6.76″. (x) 17.4.1957.

2. TREATMENTS :

6 kinds of mould-board ploughs : B_1=*Vijay* (Cossul and co.). B_2=U.P. no. 2. B_3=*Peepul* Type VIII. B_4=*Wah-wah*, B_5=*Peepul* Type M—1 and B_6=Bihar new iron.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 68′×32′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1956—N.A. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 522 lb./ac. (ii) 42.0 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	B_1	B_2	B_3	B_4	B_5	B_6
Av. yield	515	535	522	497	517	546

S.E./mean = 21.0 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 57(192).**

Site :- Agri. Res. Instt., Patna. **Type :- 'C'.**

Object :—To test the efficiency of different types of seed drills to Wheat crop.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Heavy clay. (b) Refer soil analysis, Patna. (iii) 9.12.1957. (iv) (a) 4 ploughings. (b) As per treatments. (c) 40 srs./ac. (d) 1′ between rows. (e) —. (v) 40 lb./ac. of N as A/S+30 lb./ac. of P_2O_5 Super at sowing. (vi) NP—52. (vii) Irrigated. (viii) 1 weeding. (ix) 1.16″. (x) 10.4.1958.

2. TREATMENTS :

5 types of seed drills : D_1=*Wah-wah* seeding attachment, D_2=*Rabi*. D_3=*Meeormic*, D_4=*Peepul* and D_5=*Desi Tara*.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 105′×45′. (v) N.A. (vii) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1957—N.A. (b) No. (c) Nil. (v) and (vii) Nil.

5. RESULTS :

(i) 807.6 lb./ac. (ii) 113.5 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	D_1	D_2	D_3	D_4	D_5
Av. yield	788	680	827	830	913

S.E./mean = 56.7 lb./ac.

Crop :- Wheat ***(Rabi).*** **Ref :- Bh. 58(3).**

Site :- Agri. Res. Instt., Patna. **Type :- 'C'.**

Object :—To determine the optimum seedrate and suitable method of sowing Wheat.

1. BASAL CONDITIONS :

(i) (a) Maize (fodder)-Wheat-Sugarcane. (b) Maize (fodder). (c) 1½ mds./ac. of A/S. (ii) (a) Heavy clay. (b) Refer soil analysis, Patna. (iii) 2.11.1958. (iv) (a) N.A. (b) to (d) As per treatments. (e) N.A. (v) 1½ mds./ac. of A/S+3 mds./ac. of Super applied behind the plough in furrows before sowing. (v) NP—799 (early). (vii) Irrigated. (viii) One hoeing and weeding. (ix) 3.05″. (x) 3.4.1959.

2. TREATMENTS :

All combinations of (1) and (2).

(1) 2 methods of sowing : S_1=With *Tara* and S_2=With seed drill.

(2) 3 seed rates : R_1=20, R_2=30 and R_3=40 lb./ac.

Sowing done in lines 9″ apart.

3. DESIGN :

(i) Fact in R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 63′×21′. (b) 60′×18′. (v) 1½′×1½′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) 1958—1960. (b) No. (c) N.A. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1139 lb./ac. (ii) 220.5 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	R_1	R_2	R_3	Mean
S_1	1092	1061	1200	1118
S_2	1112	1259	1111	1161
Mean	1102	1160	1156	1139

S.E. of R marginal mean = 78.0 lb./ac.
S.E. of S marginal mean = 63.6 lb./ac.
S.E. of body of table = 110.2 lb./ac.

Crop :- Wheat ***(Rabi)*** **Ref :- Bh. 59(111).**

Site :- Agri. Res. Instt., Patna. **Type :- 'C'.**

Object :—To determine the optimum seedrate and suitable method of sowing Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Dhaincha.* (c) Nil. (ii) (a) Heavy clay. (b) Refer soil analysis, Patna. (iii) 9 and 25.11.1959. (iv) (a) 4 ploughings. (b) to (d) As per treatments. (e) N.A. (v) 1½ mds/ac. of A/S and 3 mds/ac. of Super top-dressed 30 srs/ac. of A/S at 2nd irrigation. (vi) NP—799. (vii) Irrigated. (viii) 1 hoeing by hand hoe. (ix) 1.60". (x) 2, 3 and 7.4.1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(3) on page 369.

5. RESULTS :

(i) 1264 lb./ac. (ii) 128.4 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	R_1	R_2	R_3	Mean
S_1	1194	1318	1489	1334
S_2	1066	1167	1349	1194
Mean	1130	1242	1419	1264

S.E. of R marginal mean = 45.4 lb./ac.
S.E. of S marginal mean = 37.1 lb./ac.
S.E. of body of table = 64.2 lb./ac.

Crop :- Wheat *(Rabi).* **Ref :- Bh. 56 (92).**
Site :- Govt. Agri. Farm, Piprakothi. **Type :- 'C'.**

Object :—To find out suitable crop rotation for Wheat.

1. BASAL CONDITIONS :

(i) (a) and (b) As per treatments. (c) 7 mds/ac. of cake and 1¼ mds/ac. of Super at the time of planting. (ii) (a) Sandy loam. (b) N.A. (iii) 10.12.1956. (iv) (a) 3 ploughings. (b) Broadcasting. (c) 40 srs/ac. (d) and (e) —. (v) Nil. (vi) NP—755. (vii) Unirrigated. (viii) 1 weeding by *khurpi.* (ix) N.A. (x) 14.4.1957.

2. TREATMENTS :

T_1=Maize—Wheat.
T_2=*Kalai*—Wheat.
T_3=Maize+*Kalai*—Wheat.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) 20'×63.5'. (b) 18'×60.5'. (v) 1'×1½'. (vi) Yes.

4. GENERAL :

(i) No lodging. (ii) None. (iii) Tiller count, height measurements and grain yield. (iv) (a) 1956—N.A. (b) and (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 1171 lb./ac. (ii) 201.1 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_1	T_2	T_3
Av. yield	1126	1082	1306

S.E./mean = 82.1 lb./ac.

Crop :- Wheat *(Rabi).* **Ref :- Bh. 57(190).**
Site :- Govt. Agri. Farm, Piprakothi. **Type :- 'C'.**

Object :—To find out suitable cropping pattern with Maize—Wheat rotation.

1. BASAL CONDITIONS :

(i) (a) and (b) As per treatments. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 9.11.1957. (iv) (a) 4 ploughings by *desi* plough. (b) Behind the plough. (c) 40 srs/ac. (d) 10" between rows. (e) —. (v) Nil. (vi) NP—755. (vii) Irrigated. (viii) 2 weedings by *khurpi*. (ix) 2.65". (x) 2.4.1958.

2. TREATMENTS :

Same as in expt. no. 55(43) on page 362.

3. DESIGN:

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 30'×42'4". (b) 27'×40'4". (v) 1½'×1'. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1957—1958. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 285 lb./ac. (ii) 58.2 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5
Av. yield	221	307	230	290	377

S.E./mean = 29.1 lb./ac.

Crop :- Wheat ***(Rabi).*** **Ref :- Bh. 58(102).**

Site :- Govt. Agri. Farm, Piprakothi. **Type :- 'C'.**

Object :—To find out suitable cropping pattern with Maize—Wheat rotation.

1. BASAL CONDITIONS :

(i) (a) and (b) As per treatments. (c) Nil. (ii) Sandy loam. (b) N.A. (iii) 24.11.1958. (iv) (a) 2 ploughings by Bihar plough, 2 by country plough and 2 by cultivator and peg harrow. (b) Behind the plough. (c) 40 srs/ac. (d) 2'×1'. (e) —. (v) Nil. (vi) NP—755 (medium). (vii) Unirrigated. (viii) 2 weedings and 1 interculturing. (ix) 4.10". (x) 9.4.1959.

2. TREATMENTS :

Same as in expt. no. 58(5) on page 363.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) 30'×43⅓'. (b) 27'×40⅓'. (v) 1½'×1½'. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Slight attack of rust—no control measures taken. (ii) Grain yield. (iv) (a) 1958—1959. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 693 lb./ac. (ii) 177.7 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5	6
Av. yield	668	614	694	699	668	815

S.E./mean = 88.9 lb./ac.

Crop :- Wheat ***(Rabi).*** **Ref :- Bh. 59(42).**

Site :- Govt. Agri. Farm, Piprakothi. **Type :- 'C'.**

Object : —To find out suitable cropping pattern with Maize—Wheat rotation.

1. BASAL CONDITIONS

(i) (a) and (b) As per treatments. (c) Nil. (ii) (a) Sandy loam. (b) Nil. (iii) 30.11.1959. (iv) 2 ploughings by Bihar plough and 2 by cultivator. (b) Behind the plough. (c) 40 srs/ac. (d) 1′ between rows. (e) —. (v) Nil. (vi) NP—799. (vii) Irrigated. (viii) 2 weedings by *khurpi*, 4 interculturing by cultivator and earthing by ridger. (ix) N.A. (x) 29.4.1960.

2. TREATMENTS :

Same as in expt. no. 58(5) on page 363.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 24′×35′. (b) 22′×33′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Tiller count, grain and straw yield. (iv) (a) 1958—1959. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 476 lb./ac. (ii) 195.2 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5	6
Av. yield	627	494	513	313	467	442

S.E./mean = 97.6 lb./ac.

Crop :- Wheat. **Ref :- Bh. 58(99).**

Site :- Govt. Agri. Farm, Piprakothi. **Type :- 'C'.**

Object :—To study the use of intermediate crops in Maize—Wheat rotation.

1. BASAL CONDITIONS :

(i) (a) and (b) As per treatments. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 6.11.1958. (iv) (a) 3 ploughings by Bihar senior plough each followed by beaming. (b) Behind the plough. (c) 40 srs/ac. (d) 1′ between rows. (e) —. (v) Nil. (vi) NP—755. (vii) Unirrigated. (viii) 4 weedings by *khurpi*, 2 interculturings by cultivator and earthing by ridger. (ix) 4.10″. (x) 5.4.1959.

2. TREATMENTS :

Same as in expt. no. 55(43) on page 362.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 30′×42′4″. (b) 27′×40′4″. (v) 1′×1½′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) N.A. (b) and (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 718 lb./ac. (ii) 288.0 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5
Av. yield	718	339	974	800	761

S.E./mean = 144.0 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 57 (196).**

Site :- Distt. Agri. Farm, Purnea. **Type :- 'C'.**

Object :—To study the use of intermediate crops in Maize—Wheat rotation.

BASAL CONDITIONS :

(i) (a) and (b) As per treatments. (c) 40 lb./ac. of P_2O_5 as Super+20 lb./ac. of N as A/S. (ii) (a) Sandy loam with alkaline patches. (b) N.A. (iii) 21.10.1957 ; resowing on 30.11.1957 due to lack of moisture. (iv) (a) 4 ploughings by *desi* plough. (b) Behind the plough. (c) 80 lb./ac. (d) 10″ between rows. (e) 2 to 3. (v) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (vi) NP—799. (vii) Irrigated. (viii) 1 weeding. (ix) 2.50″. (x) 7, 8.4.1958.

2. TREATMENTS :

s in expt. no. 55(43) on page 362.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 35½′×35½′. (b) 33′×33′. (v) 1¼′×1¼′. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1957—1958. (b) and (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 514 lb./ac. (ii) 164.1 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5
Av. yield	462	518	525	514	552

S.E./mean = 82.0 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 58 (185).**

Site :- Distt. Agri. Farm, Purnea. **Type :- 'C'.**

Object :—To study the use of intermediate crops in Maize—Wheat rotation.

1. BASAL CONDITIONS :

(i) (a) and (b) As per treatments. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 8.11.1958. (iv) (a) 4 ploughings by Bihar plough and sowing by *desi* plough. (b) behind the plough. (c) 80 lb./ac. (d) 10″ between rows. (e) N.A. (v) 20 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super at sowing and 20 lb./ac. of N as A/S at earthing. (vi) NP—799 (medium). (vii) Irrigated. (viii) 2 weedings. (ix) 6.92″. (x) 15.4.1959.

2. TREATMENTS :

Same as in expt. no. 55(43) on page 362.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 42⅓′×29′. (b) 40⅓′×27′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1957—1958. (b) Yes. (c) Nil. (v) to (vii) Nil

5. RESULTS :

(i) 1048 lb./ac. (ii) 159.6 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5
Av. yield	854	962	1214	1029	1183

S.E./mean = 79.8 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 57(180).**

Site :- Agri. Res. Instt., Pusa. **Type :- 'C'.**

Object :—To find suitable cropping pattern with Maize—Wheat rotation.

1. BASAL CONDITIONS :

(i) (a) and (b) As per treatments. (c) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy loam. (b) Refer soil analysis, Pusa. (iii) 18.11.1957. (iv) (a) 2 ploughings by mould board plough and 1 by *desi* plough. (b) Behind the plough. (c) 40 srs./ac. (d) 10″ between rows. (e) —. (v) Nil. (vi) N.A. (vii) Irrigated. (viii) 1 weeding. (ix) 2.16″. (x) 12.4.1958.

2. TREATMENTS :

1. Maize—Wheat.
2. Maize+Groundnut—Wheat.
3. Maize+*Kalai* -Wheat.
4. Maize+*Moong*—Wheat.
5. Maize+*Dhaincha*—Wheat.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) and (b) 33′×33′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain and straw yield. (iv) (a) to (c) N.A. (v) and (vi) Nil. (vii) *Moong* did not germinate.

5. RESULTS :

(i) 330 lb./ac. (ii) 112.5 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2		4	5
Av. yield	381	82	370	396	422

S.E./mean = 56.3 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 59(121).**

Site :- Agri. Res. Instt., Pusa. **Type :- 'C'.**

Object :—To find suitable cropping pattern with Maize—Wheat rotation.

1. BASAL CONDITIONS :

(i) (a) and (b) As per treatments. (c) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy loam. (b) Refer soil analysis, Pusa. (iii) 1.12.1959. (iv) (a) 2 ploughings by mould board plough and 1 by *desi* plough. (b) Behind plough. (c) 40 srs./ac. (d) 10″ between rows. (e) —. (v) Nil. (vi) NP—798. (vii) Irrigated. (viii) 2 weedings and 1 hoeing (ix) 1.85″. (x) 8.4.1960.

2. TREATMENTS :

Same as in expt. no. 58(5) on page 363 .

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 33′×22′. (b) 31′×20′4″. (v) 12″×10″. (vi) Yes.

4. GENERAL

(i) Satisfactory. (ii) Nil. (iii) Grain and straw yield. (iv) (a) to (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 229 lb./ac. (ii) 41.8 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5	6
Av. yield	232	187	357	214	232	152

S.E./mean = 20.9 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 57(178).**
Site :- Agri. Res. Instt., Pusa. **Type :- 'C'.**

Object :—To find the use of intermediate crops in Maize—Wheat rotation.

1. BASAL CONDITIONS :

(i) (a) and (b) As per treatments. (c) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy loam. (b) Refer soil analysis, Pusa. (iii) 12.11.1957. (iv) (a) 3 ploughings by mould board plough. (b) Behind plough. (c) 40 srs./ac. (d) 18" between rows. (e) —. (v) Nil. (vi) N.A. (vii) Irrigated. (viii) 1 weeding. (ix) 2.16". (x) 8.4.1958.

2. TREATMENTS :

Same as in expt. no. 55(43) on page 362.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) and (b) 33'×33'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1957—N.A. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) *Moong* did not germinate due to heavy rains. (vii) Nil.

5. RESULTS :

(i) 498 lb./ac. (ii) 42.0 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5
Av. yield	478	468	524	494	524

S.E./mean = 21.0 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 58(171).**
Site :- Agri. Res. Instt., Pusa. **Type :- 'C'.**

Object :—To determine the optimum seed-rate and suitable method of sowing Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Moong*. (c) Nil. (ii) (a) Light loam. (b) Refer soil analysis, Pusa. (iii) 21, 22.11.1958. (iv) (a) 4 ploughings. (b) to (d) As per treatments. (e) —. (vi) 216 lb./ac. of A/S+85 lb./ac. of Super+71 lb./ac. of Mur. Pot. broadcast at sowing. (vi) NP—798. (vii) Irrigated on 1.1.1959. (viii) 1 weeding by *khurpi*. (ix) 4.29". (x) 18, 19.4.1959.

2. TREATMENTS :

1. 6 srs./ac. of seed with country plough in lines 9" apart.
2. 15 srs./ac. of seed wiith country plough in lines 9" apart.
3. 20 srs./ac. of seed with country plough in lines 9" apart.
4. 30 srs./ac. of seed with country plough in lines 9" apart.
5. 40 srs./ac. of seed with country plough in lines 9" apart.
6. 6 srs./ac. of seed with dibbler spaced 9"×4".
7. 6 srs./ac. of seed with hand-hoe spaced 9"×4".

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) 63'×21'. (b) 60'×18'. (v) 1½'×1½'. (vi) Yes

4. GENERAL :

(i) Good. (ii) Moderate attack of brown rust—control measures N.A. (iii) Grain and straw yield. (iv) (a) 1958—1960. (b) No. (c) Nil. (v) (a) Sabour. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1279 lb./ac. (ii) 534.8 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5	6	7
Av. yield	946	1243	1480	1752	1624	931	977

S.E./mean = 267.4 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref : Bh. 59(101).**

Site :- Agri. Res. Instt., Pusa. Type :- 'C'.

Object :— To determine the optimum seed-rate and suitable method of sowing Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Sannhemp. (c) 125 srs./ac. of Super. (ii) (a) Light loam. (b) Refer soil analysis, Pusa. (iii) 17, 18.11.1959. (iv) (a) 4 ploughings. (b) to (d) As per treatments. (e) N.A. (v) 216 lb./ac. of A/S +85 lb./ac. of Super+71 lb./ac. of Mur. Pot. broadcasted at sowing in the experimental area. (vi) NP—798. (vii) Irrigated. (viii) 1 weeding with *khurpi*. (ix) 2.62". (x) 9, 10.4.1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(171) on page 375.

5. RESULTS :

(i) 1284 lb./ac. (ii) 170.3 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5	6	7
Av. yield	1100	1600	1304	1739	1669	759	820

S.E./mean = 85.2 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 55(56).**

Site :- Distt. Agri. Farm, Putida. Type :- 'C'.

Object :—To study the use of intermediate crops in Maize-Wheat rotation.

1. BASAL CONDITIONS :

(i) (a) and (b) As per treatments. (c) 40 lb./ac. of P_2O_5 as Super. (ii) (a) Clayey loam. (b) N.A. (iii) 4.11.1955. (iv) (a) 7 ploughings by *desi* plough. (b) Behind the plough. (c) 80 lb./ac. (d) 1′ between rows. (e) —. (v) Nil. (vi) NP—52 (late). (vii) Irrigated. (viii) Hoeing and weeding. (ix) 5.22". (x) 15.4.1956.

2. TREATMENTS :

Same as in expt. no. 55(43) on page 362.

3. DESIGN :

(i) L.Sq. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) 30′×10′. (b) 28′×8′. (v) 1′ alround. (vi) Yes.

4. GENERAL :

(i) Poor (no lodging). (ii) Nil. (iii) Biometric observations and grain yield. (iv) (a) 1955—N.A. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) Hail storm damaged the crop. (vii) The quantity of G.M. was very low and no manuring for the crop was given.

5. RESULTS :

(i) 584.1 lb./ac. (ii) 90.9 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5
Av. yield	510	675	580	580	575

S.E./mean = 40.6 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 57(131).**

Site :- Distt. Agri. Farm, Putida. Type :- 'C'.

Object :—To find a suitable legume to be sown with maize in Maize-Wheat rotation.

1. BASAL CONDITIONS :

(i) (a) and (b) As per treatments. (c) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (ii) (a) Clayey loam. (b) N.A. (iii) 4.12.1957. (iv) (a) 4 ploughings. (b) Behind the plough. (c) 40 srs./ac. (d) 1′ between rows. (e) —. (v) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (vi) BR—319. (vii) Irrigated (viii) Hoeing and weeding. (ix) 4.19″. (x) 21.3.1958.

2. TREATMENTS :

Same as in expt. no. 55(43) on page 362.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 34′×12′. (b) 32′×10′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1955—1958. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 866 lb./ac. (ii) 286.7 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5
Av. yield	835	822	909	822	940

S.E./mean = 143.4 lb./ac.

Crop :- Wheat *(Rabi).* **Ref :- Bh. 58(121).**

Site :- Distt. Agri. Farm, Putida. **Type :- 'C'.**

Object :—To find a suitable legume to be sown with maize in Maize-Wheat rotation.

1. BASAL CONDITIONS :

(i) (a) and (b) As per treatments. (c) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (ii) (a) Clayey loam. (b) N.A. (iii) 1.11.1958. (iv) (a) 4 ploughings. (b) Behind the plough. (c) 40 srs./ac. (d) 1′ between rows. (e) —. (v) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (vi) BR—319. (viii) Irrigated. (viii) 2 hoeings and weedings. (ix) 0.48″. (x) 23.2.1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 57(131) on page 376.

5. RESULTS :

(i) 307 lb./ac. (ii) 94.2 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5
Av. yield	315	271	267	324	358

S.E./mean = 47.1 lb./ac.

Crop :- Wheat *(Rabi.)* **Ref :- Bh. 58 (123).**

Site :- Distt. Agri. Farm, Putida. **Type :- 'C'.**

Object :—To find suitable legume to be sown with maize in Maize—Wheat rotation.

1. BASAL CONDITIONS :

(i) (a) and (b) As per treatments. (c) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (ii) (a) Clayey loam. (b) N.A. (iii) 15.11.1958. (iv) (a) 4 ploughings. (b) Behind the plough. (c) 80 lb /ac. (d) 10″ between rows. (e) —. (v) 20 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super. (vi) NP—798. (vii) Irrigated. (viii) 1 hoeing and 1 weeding. (ix) 0.48″. (x) 1.3.1959.

2. TREATMENTS :

Same as in expt. no. 58(5) on page 363.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 42′×13′. (b) 40′×11′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1958—1959. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 859 lb./ac. (ii) 167.9 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5	6
Av. yield	739	856	839	864	908	950

S.E./mean = 89.0 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 59 (60).**

Site :- Distt. Agri. Farm, Putida. **Type :- 'C'.**

Object :—To find a suitable legume crop to be sown with maize in Maize—Wheat rotation.

1. BASAL CONDITIONS :

(i) (a) and (b) As per treatments. (c) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (ii) (a) Clayey loam. (b) N.A. (iii) 9.12.1959. (iv) (a) 4 ploughings. (b) Behind the plough. (c) 80 lb./ac. (d) 10″ between rows. (e) —. (v) 20 lb./ac. of N as A/S+20 lb./ac. P_2O_5 as Super. (vi) BR—319. (vii) Irrigated. (viii) 2 hoeings and weedings. (ix) 1.18″. (x) 1.4.1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(123) on page 377.

5. RESULTS :

(i) 674 lb./ac. (ii) 520 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5	6
Av. yield	821	691	235	676	1086	536

S.E./mean = 260 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 56(77).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'C'.**

Object :—To find the use of intermediate crops in Maize—Wheat rotation.

1. BASAL CONDITIONS :

(i) (a) and (b) As per treatments. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 5.12.1956. (iv) (a) 2 ploughings. (b) Broadcasting. (c) 80 lb./ac. (d) and (e) N.A. (v) G.M. alone. Quantity—N.A. (vi) Local. (vii) Irrigated. (viii) Earthing once. (ix) 5·67″. (x) 10.4.1957.

2. TREATMENTS :

Same as in expt. no. 55(43) on page 362.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 56′×24′. (b) 54′×22′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Attack of black and brown rust. (iii) Grain and straw yield. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) (a) Kanke. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 749.6 lb./ac. (ii) 142.5 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5
Av. yield	799	762	779	698	711

S.E./mean = 71.3 lb./ac.

Crop :- Wheat. **Ref :- Bh. 54(51).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'C'.**

Object :—To test the after effects of certain kharif crops on the yield of succeeding Wheat crop.

1. BASAL CONDITIONS :

(i) (a) and (b) As per treatments. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 29.11.1954. (iv) (a) 2 spadings. (b) Sown in lines. (c) 4 oz./plot. (d) 1′ between rows. (e) —. (v) Nil. (vi) NP—52 (late). (vii) Irrigated. (viii) 2 weedings and interculturing. (ix) N.A. (x) 17.3.1955.

2. TREATMENTS :

6 *kharif* crops followed by Wheat : G_1=Fallow, G_2=*Kalai*, G_3=*Moong*, G_4=Soyabean, G_5=Maize and G_6=*Jowar*.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) and (b) 12′×9′. (v) No. (vi) Yes.

4. GENERAL :

(i) Fair, no lodging. (ii) No. (iii) Grain and straw yield. (iv) (a) 1954—1956. (b) Yes. (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 440 lb./ac. (ii) 70.2 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	G_1	G_2	G_3	G_4	G_5	G_6
Av. yield	167	762	754	541	251	168

S.E./mean = 35.1 lb./ac.

Crop :- Wheat ***(Rabi).*** **Ref :- 55(228).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'C'.**

Object :—To test the after effects of certain kharif crops on the yield of succeeding Wheat crop.

1. BASAL CONDITIONS :

(i) (a) and (b) As per treatments. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 28.11.1955. (iv) (a) 3 spadings. (b) Line sowing. (c) 3 oz./plot. (d) 1′ between rows. (e) —. (v) Nil. (vi) N.A. (vii) Irrigated. (viii) 2 weedings. (ix) 0.84″. (x) 4.4.1956.

2. TREATMENTS :

Same as in expt. no. 54(51) above.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 14′×11′. (b) 12′×9′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1954—1956. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 469 lb./ac. (ii) 143.2 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	G_1	G_2	G_3	G_4	G_5	G_6
Av. yield	259	920	726	428	259	220

S.E./mean = 71.6 lb./ac.

Crop :- Wheat ***(Rabi).*** **Ref :- Bh. 56(208).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'C'.**

Object :—To test the after effects of certain kharif crops on the yield of succeeding Wheat crop.

1. BASAL CONDITIONS :

(i) (a) and (b) As per treatments. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 20.11.1956. (iv) (a) 3 spadings. (b) Line sowing. (c) 3 oz./plot. (d) 1′ between rows. (e) N.A. (v) Nil. (vi) NP—52. (vii) Irrigated. (viii) 2 weedings. (ix) 6.64″. (x) 23.4.1957.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 54(51) on page 379.

5. RESULTS :

(i) 551 lb./ac. (ii) 88.6 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	G_1	G_2	G_3	G_4	G_5	G_6
Av. yield	324	700	662	933	337	350

S.E./mean = 44.3 lb./ac.

Crop :- Wheat ***(Rabi).*** **Ref :- Bh. 58(155).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'C'.**

Object :—To find out suitable legume mixture with maize to be followed by Wheat.

1. BASAL CONDITIONS :

(i) (a) and (b) As per treatments. (c) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy loam. (b) N.A. (iii) 13.11.1958. (iv) (a) 4 ploughings. (b) Behind the plough. (c) 80 lb./ac. (d) 10″ between rows. (e) —. (v) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (vi) NP—798. (vii) Irrigated. (viii) 1 weeding and 1 hoeing. (ix) 4.03″. (x) 20.3.1959.

2. TREATMENTS :

Same as in expt. no. 58(5) on page 363.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 34′×23′. (b) 33′×22′. (v) 6″×6″. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1958—N.A. (b) N.A. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 534 lb./ac. (ii) 231.2 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5	6
Av. yield	772	463	525	370	439	633

S.E./mean = 115.6 lb./ac.

Crop :- Wheat ***(Rabi).*** **Ref :- Bh. 59(93).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'C'.**

Object :—To find out a suitable legume mixture with Maize to be followed by Wheat.

1. BASAL CONDITIONS :

(i) (a) and (b) N.A. (c) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (ii) (a) and (b) N.A. (iii) 6.12.1959. (iv) (a) 4 ploughings. (b) Behind the plough. (c) 40 srs/ac. (d) 10″ between rows. (e) —. (v) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (vi) N P—798. (vii) Irrigated. (viii) 1 weeding and 1 hoeing. (ix) 1.49″. (x) 6.4.1960.

2. TREATMENTS :

Same as in expt. no. 58(5) on page 363.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 37½′×21′. (b) 36½′×29′. (v) 6″×6″. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1958—N.A. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 793 lb./ac. (ii) 122.6 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5	6
Av. yield	664	641	965	912	764	811

S.E./mean = 61.3 lb./ac.

Crop :- Wheat ***(Rabi).*** **Ref :- Bh. 56(79).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'C'.**

Object :—To find out the best method of Wheat cultivation.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Maize. (c) 40 lb./ac. P_2O_5 as Super. (ii) (a) Sandy loam. (b) N.A. (iii) 22.12.1956. (iv) (a) 4 ploughings by *desi* plough. (b) As per treatments. (c) 40 srs/ac. (d) 9″×6″. (e) —. (v) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super at the time of sowing. (vi) Local (early). (vii) Irrigated. (viii) Weeding and thinning. (ix) 5.67″. (x) 28.3.1957.

2. TREATMENTS :

3 methods of sowing : M_1=Broadcasting, M_2=In ridges and M_3=Dibbling.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) 15′×9′. (b) 14′×8′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Attack of black and yellow rust—control measures N.A. (iii) Tiller count, grain and straw yield. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1755 lb./ac. (ii) 26.1 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3
Av. yield	2130	1328	1807

S.E./mean = 10.6 lb./ac.

Crop :- Wheat ***(Rabi).*** **Ref :- Bh. 57(149).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'C'.**

Object :—To find out the best method of Wheat cultivation.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) and (b) N.A. (ii) 26 to 28.11.1957. (iv) (a) 4 ploughings by *desi* plough. (b) As per treatments. (c) 40 srs/ac. (d) 9″×6″. (e) N.A. (v) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 of as Super. (vi) NP—52. (vii) Irrigated. (viii) 1 hoeing and weedings. (ix) 0.06″. (x) 6.4.1958.

2. TREATMENTS :

3 methods of sowing : M_1=Broadcasting. M_2=In ridges and M_3=Dibbling.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 7. (iv) (a) 24′×17½′. (b) 22′×15′. (v) 1′×¾′. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1956—1958. (b) and (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 667.7 lb./ac. (ii) 186.5. lb./ac. (iii) Treatment differences are not significant. (iv) [Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3
Av. yied	650	559	794

S.E./mean = 70.5 lb./ac.

Crop :- Wheat ***(Rabi).*** **Ref :- Bh. 58(170).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'C'.**

Object :—To determine the optimum seed-rate and suitable method of sowing Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Marua.* (c) Nil. (ii) (a) Clayey loam. (b) N.A. (iii) 16, 18.11.1958. (iv) (a) 4 ploughings (b) to (d) As per treatments. (e)—. (v) 120 mds. of F.Y.M. applied to whole experiment before sowing. (vi) NP—798. (vii) Irrigated. (viii) 1 weeding and hoeing. (ix) 3.77″. (x) 13, 14.4.1959.

2. TREATMENTS :

1. 6 srs/ac. of seed with country plough in lines 9″ apart.
2. 15 srs/ac. of seed with country plough in lines 9″ apart.
3. 20 srs/ac. of seed with country plough in lines 9″ apart.
4. 30 srs/ac. of seed with country plough in lines 9″ apart.
5. 40 srs/ac. of seed with country plough in lines 9″ apart.
6. 6 srs/ac. of seed with dibbler spaced 9″×4″.
7. 6 srs/ac. of seed with hand-hoe spaced 9″×4″.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) 63′×21′. (b) 60′×18′. (v) 1½′×1½′. (iv) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1958—1960. (b) No. (c) Nil. (v) (a) Pusa. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1054 lb./ac. (ii) 172.0 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5	6	7
Av. yield	1017	1091	1036	977	894	1192	1172

S.E./mean = 86.0 lb./ac.

Crop :- Wheat ***(Rabi).*** **Ref :- Bh. 59(100).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'C'.**

Object :—To determine the optimum seed-rate and suitable method of sowing Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Sannhemp. (c) Nil. (ii) (a) Clayey loam. (b) N.A. (iii) 13, 14.11.1959. (iv) (a) 4 ploughings. (b) to (d) As per treatments. (e) —. (v) 1½ mds/ac. of A/S and Super each. (vi) NP—798. (viii) 1 weeding and hoeing. (ix) 0.9". (x) 6, 7.4.1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(170) on page 382.

5. RESULTS :

(i) 571.4 lb./ac. (ii) 80.0 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5	6	7
Av. yield	415	595	778	638	664	573	337

S.E./mean = 40.0 lb./ac.

Crop :- Wheat ***(Rabi).*** **Ref :- Bh. 58(240).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'C'.**

Object :—To study the effect of rabi legume crops sown i n rows of Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Maize. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 24,10.1958. (iv) (a) 4 spadings. (b) Line sowing. (c) Wheat 40 srs/ac. ; Gram 30 srs/ac. ; Pea 30 srs/ac. ; *Khesari* 30 srs/ac. and *Sagi* ½ oz./plot. (d) 1' between rows. (e) —. (v) Nil. (vi) Local. (vii) N.A. (viii) 2 weedings by *khurpi.* (ix) 4.03". (x) Pea, *Masur, Khesari* on 10.3.1959 ; Wheat, Gram and *Sangi* on 4.4.1959.

2. TREATMENTS :

6 crops sown in interspaces of 2 rows of wheat : C_1=Gram, C_2=Wheat, C_3=Pea, C_4=*Masur*, C_5=*Khesari* and C_6=*Sangi.*

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 14'×11'. (b) 12'×9'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Grain yield. (iv) (a) to (c) N.A. (v) (a) and (b) Nil. (vi) Heavy rains on 22.1.1959 (vii) Nil.

5. RESULTS :

(i) 918.0 lb./ac. (ii) 242.1 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	C_1	C_2	C_3	C_4	C_5	C_6
Av. yield	2009	181	804	583	1192	739

S.E./mean = 121.1 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 55 (78).**

Site :- Agri. Res. Instt., Sabour. Type :- 'C'.

Object :—To find the most economical spacing for higher yield of Wheat.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Vegetables. (c) 40 lb./ac. of A/S and Super each. (ii) (a) Sandy loam. (b) N.A. (iii) 24.11.1955. (iv) (a) 1 harrowing. (b) Line sowing. (c) N.A. (d) As per treatments. (e) —. (v) Vegetable remains were used as G.M. (vi) NP—52 (late). (vii) Irrigated. (viii) Weeding and harrowing. (ix) 1.84″. (x) 14.4.1956.

2. TREATMENTS :

Main-plot treatments :

2 line spacings : $L_1=9''$ and $L_2=12''$.

Sub-plot treatments :

3 plant spacings : $D_1=2''$, $D_2=4''$ and $D_3=6''$.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block ; 3 sub-plots/main-plot. (b) N.A. (iii) 5. (iv) (a) 10′×10′6″ and 10′×11′. (b) 8′×9′. (v) 1 row left. (vi) Yes.

4. GENERAL :

(i) Good ; no lodging. (ii) Attack of stem and leaf rust. (iii) Grain yield. (iv) (a) 1953 –contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1107 lb./ac. (ii) (a) 146.6 lb./ac. (b) 152.3 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	D_1	D_2	D_3	Mean
L_1	1073	1182	1042	1099
L_2	1244	1073	1027	1115
Mean	1159	1128	1035	1107

S.E. of difference of two

1. L marginal means	=	53.4 lb./ac.
2. D marginal means	=	68.5 lb./ac.
3. D means at the same level of L	=	96.4 lb./ac.
4. L means at the same level of D	=	115.0 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 58(111).**

Site :- Bot. Sub-Stn., Sepaya. Type :- 'C'.

Object :—To find suitable cropping pattern with Maize—Wheat rotation.

1. BASAL CONDITIONS :

(i) (a) and (b) As per treatments. (c) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (ii) (a) Clay loam. (b) N.A. (iii) 10.11.1958. (iv) (a) 1 ploughing by Bihar plough and one by country plough. (b) Behind the plough. (c) 40 srs/ac. (d) N.A. (e) —. (v) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (vi) NP—755. (vii) Unirrigated. (viii) Weeding by *khurpi*. (ix) 2.75″. (x) 8.4.1959.

2. TREATMENTS :

Same as in expt. no. 58(5) on page 363.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 35′×24′. (b) 33′×22′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) Attack of yellow rust. (iii) Tiller count and grain yield. (iv) (a) to (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 486.0 lb./ac. (ii) 59.4 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5	6
Av. yield	774	270	630	432	540	270

S.E./mean = 29.7 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 59(68).**

Site :- Bot. Sub-Stn., Sepaya. **Type :- 'C'.**

Object :—To find a suitable cropping pattern with Maize—Wheat rotation.

1. BASAL CONDITIONS :

(i) (a) and (b) As per treatments. (c) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy loam. (b) N.A. (iii) 27.12.1959. (iv) (a) 2 ploughings by Bihar plough. (b) Behind the plough. (c) 80 lb./ac. (d) 10″ between rows. (e) —. (v) Nil. (vi) NP—761. (vii) Unirrigated. (viii) 1 weeding by *khurpi*. (ix) N.A. (x) 27.4.1960.

2. TREATMENTS :

Same as in expt. no. 58(5) on page 363.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 37′×26′. (b) 33′×22′. (v) 2′×2′. (vi) Yes.

4. GENERAL :

(i) Very poor. (ii) Attack of yellow rust. (iii) Grain yield. (iv) (a) 1958—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 69.5 lb./ac. (ii) 14.3 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5	6
Av. yield	66	42	85	46	58	120

S.E./mean = 7.1 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 55(127).**

Site :- Monghyr Sadar (Monghyr, c.f.). **Type :- 'C'.**

Object :—To study the effect of intermediate crops in Maize—Wheat rotation.

1. BASAL CONDITIONS :

(i) (a) and (b) As per treatments. (c) Nil. (ii) Clayey loam. (iii) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (iv) NP—52 (improved). (v) (a) Preparatory cultivation done by *desi* plough. (b) Behind the plough. (c) 80 lb./ac. (d) Row to row spacing 10″. (e) N.A. (vi) 26.11.1955. (vii) Irrigated. (viii) Weeding. (ix) 1.26″. (x) 31.3.1956.

2. TREATMENTS :

1. Maize—Wheat.
2. Maize—*Kalai* (fodder)—Wheat.
3. Maize—*Kalai* (G.M.)—Wheat.
4. Maize—*Moong* (fodder)—Wheat.
5. Maize—*Moong* (G.M.)—Wheat.

3. DESIGN :

(i) and (ii) Farms with facilities for irrigation selected. Design adopted is R.B.D. with 4 replications. (iii) (a) 60′×18′. (b) 58.5′×16.5′. (iv) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Dates of germination and flowering, yield of grain and straw. (iv) (a) to (c) No. (v) (a) Kanke. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 3221 lb./ac. (ii) 275.4 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5
Av. yield	2506	3435	3110	3713	3342

S.E./mean = 137.7 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 55(128).**

Site :- Monghyr Sadar (Monghyr, c.f.). **Type :- 'C'.**

Object :—To study the effect of intermediate crops in Maize—Wheat rotation.

1. BASAL CONDITIONS :

(i) (a) and (b) As per treatments. (c) N.A. (ii) Clayey loam. (iii) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (iv) NP—52 (improved). (v) (a) N.A. (b) Behind the plough. (c) Wheat. (d) Row to row 10″. (e) —. (vi) 25.11.1955. (vii) Irrigated. (viii) Weeding. (ix) 1.26″. (x) 29, 30.3.1956.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 55(127) on page 385.

5. RESULTS :

(i) 3496 lb./ac. (ii) 532.6 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5
Av. yield	2717	3523	3892	3615	3731

S.E./mean = 266.3 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 58(251).**

Site :- Govt. Agri. Farm, Piprakothi. **Type :- 'CV'.**

Object :—To find out the effect of different dates of sowing on different varieties of Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai*. (c) 7½ mds/ac. of castor cake+2½ mds/ac. of Super and 1½ mds/ac. of A/S to sugarcane. (ii) (a) Sandy loam. (b) N.A. (iii) As per treatments. (iv) (a) 3 ploughings by Bihar senior plough and 2 by *desi* plough. (b) Behind the plough. (c) 40 srs/ac. (d) 10″ between rows. (e)—. (v) *Sanai* buried at site. (vi) As per treatments. (vii) Unirrigated. (viii) 2 weedings by *khurpi* and 1 harrowing by peg harrow. (ix) 2.77″. (x) 14.4 1959 to 21.4.1959.

2. TREATMENTS :

Main-plot treatments :
4 dates of sowing : D_1=15.11.1958, D_2=1.12.1958, D_3=15.12.1958 and D_4=1.1.1959.
Sub-plot treatments :
6 varieties : V_1=NP—798, V_2=NP—799, V_3=BR—319, V_4=NP—761, V_5=NP—710 and V_6=NP—52.

3. DESIGN .

(i) Split-plot. (ii) (a) 4 main-plots/replication ; 6 sub-plots/main-plot. (b) N A. (iii) 3. (iv) (a) 29′×40′4″. (b) 27′×40′4″. (v) 1′ length wise of the plot. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Some plants were affected by black rust—control measures not taken. (iii) Grain and straw yield. (iv) (a) 1958—1959. (b) and (c) No. (v) (a) Purnea, Pusa, Sabour and Saharsa. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 656 lb./ac. (ii) (a) 265.6 lb./ac. (b) 199.7 lb./ac. (iii) Main effects of D and V are highly significant. Interaction D×V is significant. (iv) Av. yield of grain in lb./ac.

	V_1	V_2	V_3	V_4	V_5	V_6	Mean
D_1	1097	1059	785	617	933	1083	929
D_2	1131	1138	586	1049	610	686	867
D_3	825	1015	418	617	569	446	649
D_4	223	96	103	261	305	93	180
Mean	819	827	473	636	604	577	656

S.E. of difference of two

1. D marginal means = 88.5 lb./ac.
2. V marginal means = 81.5 lb./ac.
3. V means at the same level of D = 162.9 lb./ac.
4. D means at the same level of V = 173.2 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 59(175).**
Site :- Govt. Agri. Farm, Piprakothi. **Type :- 'CV'.**

Object :—To find out the effect of different dates of sowing on different varieties of Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) No. (ii) (a) Sandy loam. (b) N.A. (iii) As per treatments. (iv) (a) 1 ploughing by *desi* plough 2 by Bihar senior plough and 1 operation by cultivator. (b) Behind the plough. (c) 40 srs/ac. (d) 10″ between rows. (e) —. (v) *Sanai* buried in *situ*, (vi) As per treatments. (vii) Irrigated. (viii) 1 weeding by *khurpi* and 1 harrowing by peg harrow. (ix) 3.50″. (x) 26.3.1960 to 23.4.1960.

2. TREATMENTS :

Main-plot treatments :
5 dates of sowing : D_1=1.11.1959, D_2=15.11.1959, D_3=1.12.1959, D_4=15.12.1959 and D_5=1.1.1960.
Sub-plot treatments :
Same as in expt. no. 58(251) on page 386.

3. DESIGN :

(i) Split-plot. (ii) (a) 5 main-plots/replication, 6 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a) 33′×18′5″. (b) 33′×16′5″. (v) 1′ length wise. (vi) Yes.

4. GENERAL :

Same as in expt. no. 58(251) on page 386.

5. RESULTS

(i) 673 lb./ac. (ii) (a) 242.8 lb./ac. (b) 312.6 lb./ac. (iii) Main effect of D is highly significant. V effect is significant. (iv) Av. yield of grain in lb./ac.

	V_1	V_2	V_3	V_4	V_5	V_6	Mean
D_1	703	703	1127	972	1729	1516	1125
D_2	1257	854	682	834	1144	1261	1005
D_3	937	606	599	875	699	872	765
D_4	165	434	420	475	544	351	399
D_5	97	10	48	76	72	110	69
Mean	632	522	575	646	838	822	673

S.E. of difference of two

1. D marginal means = 80.9 lb./ac.
2. V marginal means = 114.1 lb./ac.
3. V means at the same level of D = 255.1 lb./ac.
4. D means at the same level of V = 270.2 lb./ac.

Crop :- Wheat *(Rabi.)* **Ref :- Bh. 58 (183).**

Site :- Distt. Agri. Farm, Purnea. **Type :- 'CV'.**

Object :—To find out the effect of different dates of sowing on different varieties of Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Maize. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) As per treatments. (iv) (a) N.A. (b) Behind the plough. (c) 80 lb /ac. (d) 10" between rows. (e)—. (v) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super at sowing. (vi) As per treatments. (vii) Irrigated. (viii) to (x) N.A.

2. TREATMENTS :

Main-plot treatments :

5 dates of sowing : D_1=1.11.1958, D_2=15.11.1958, D_3=1.12.1958, D_4=15.12.1958 and D_5=1.1.1959.

Sub-plot treatments :

Same as in expt. no. 58(251) on page 386 .

3. DESIGN :

(i) Split-plot. (ii) (a) 5 main-plots/replication, 6 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a) 30'×29'11". (b) 27'×26'11". (v) 1½' all round the plot. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1957—1959. (b) and (c) N.A. (v) (a) Piprakothi, Pusa, Sabour and Saharsa. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 798 lb./ac. (ii) (a) 232 lb./ac. (b) 128.4 lb./ac. (iii) Main effects of D, V and interaction D×V are highly significant. (iv) Av. yield of grain in lb./ac.

	V_1	V_2	V_3	V_4	V_5	V_6	Mean
D_1	453	237	514	648	278	587	453
D_2	1070	977	998	1093	761	1234	1022
D_3	1111	1245	1193	1134	833	864	1063
D_4	1019	1224	772	957	610	648	885
D_5	679	720	576	612	342	473	567
Mean	866	881	811	889	581	761	798

S.E. of difference of two

1. D marginal means = 77.3 lb./ac.
2. V marginal means = 46.9 lb./ac.
3. V means at the same level of D = 104.8 lb./ac.
4. D means at the same level of V = 123.0 lb./ac.

Crop :- Wheat ***(Rabi).*** **Ref :- Bh. 59(122).**

Site :- Distt. Agri. Farm, Purnea. **Type :- 'CV'.**

Object :—To find out the effect of different dates of sowing on different varieties of Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Maize. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) As per treatments. (iv) (a) N.A. (b) Behind the plough. (c) 80 lb./ac. (d) 10" between rows. (e)—. (v) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (vi) As per treatments. (vii) Irrigated. (viii) 3 weedings. (ix) and (x) N.A.

2. TREATMENTS :

Main-plot treatments :

6 dates of sowing : D_1=15.10.1959, D_2=1.11.1959, D_3=15.11.1959, D_4=1.12.1959, D_5=15.12.1959 and D_6=1.1.1960.

Sub-plot treatments :

Same as in expt. no. 58(251) on page 386.

3. DESIGN :

(i) Split-plot. (ii) (a) 6 main-plots/replication; 6 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a) 33¼'×21'. (b) 30¼'×18'. (v) 1½'×1½'. (vi) Yes.

4. GENERAL :

Same as in expt. no. 58(251) on page 386.

5. RESULTS :

(i) 253.9 lb./ac. (ii) (a) 266.0 lb./ac. (b) 140.7 lb./ac. (iii) Main effect of D and interaction D×V are highly significant. (iv) Av. yield of grain in lb./ac.

	V_1	V_2	V_3	V_4	V_5	V_6	Mean
D_1	12.3	27.2	77.3	27.2	39.5	77.3	43.5
D_2	432.0	284.7	569.4	75.7	226.3	150.6	289.8
D_3	664.8	716.7	441.8	520.8	302.0	246.8	482.2
D_4	356.3	376.8	161.3	493.7	438.6	390.8	369.6
D_5	390.8	298.7	240.3	212.3	329.1	223.0	282.4
D_6	37.8	88.9	44.4	55.1	75.7	34.6	56.1
Mean	315.7	298.8	255.6	230.8	235.2	187.2	253.9

S.E. of difference of two

1. D marginal means = 88.7 lb./ac.
2. V marginal means = 46.9 lb./ac.
3. V means at the same level of D = 114.9 lb./ac.
4. D means at the same level of V = 137.3 lb./ac.

Crop :- Wheat ***(Rabi).*** **Ref :- Bh. 59(214).**

Site :- Agri. Res. Instt., Pusa. **Type :- 'CV'.**

Object :—To find out the effect of different dates of sowing on different varieties of Wheat.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Pusa. (iii) As per treatments. (iv) (a) 2 ploughings by mould board plough and 1 by *desi* plough. (b) Behind the plough. (c) 40 srs./ac. (d) 10" between rows. (e) 1 to 2. (v) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super before sowing. (vi) As per treatments. (vii) Irrigated. (viii) 1 hand weeding. (ix) 18.57". (x) 18.3.1960 to 15.4.1960.

2. TREATMENTS :

Main-plot treatments :

6 dates of sowings : D_1=15.10.1959, D_2=1.11.1959, D_3=15.11.1959, D_4=1.12.1959, D_5=15.12.1959 and D_6=1.1.1960,

Sub-plot treatments :
Same as in expt. no. 58(251) on page 386.

3. DESIGN :

(i) Split-plot. (ii) (a) 5 main-plots/replication ; 6 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a) 27′×20′. (b) 27′×19′. (v) ½′ lengthwise. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1959—N.A. (b) and (c) No. (v) (a) Piprakothi, Purnea, Sabour and Saharsa. (b) N.A. (vi) D_1 Could not be sown due to heavy rains. (vii) Nil.

5. RESULTS :

(i) 804 lb./ac. (ii) (a) 329.8 lb./ac. (b) 205.9 lb./ac. (iii) Main effects of D and V are highly significant. (iv) Av. yield of grain in lb./ac.

	V_1	V_2	V_3	V_4	V_5	V_6	Mean
D_2	1470	1383	622	1164	1150	873	1110
D_3	1456	1368	990	1201	1012	1070	1183
D_4	1405	1208	1259	1310	1033	1084	1217
D_5	535	448	240	419	349	328	386
D_6	197	186	73	120	87	84	124
Mean	1012	918	637	843	726	688	804

S.E. of difference of two

1. D marginal means = 110.0 lb./ac.
2. V marginal means = 68.6 lb./ac.
3. V means at the same level of D = 161.1 lb./ac.
4. D means at the same level of V = 188.8 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 58(167).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'CV'.**

Object :—To find out the effect of different dates of sowing on different varieties of Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) Nil. (ii) (a) Clayey loam. (b) N.A. (iii) As per treatments. (iv) (a) 3 ploughings. (b) Behind the plough. (c) 80 lb./ac. (d) 10″ between rows. (e) —. (v) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (vi) As per treatments. (vii) Irrigated. (viii) 2 weedings. (ix) 3.02″. (x) N.A.

2. TREATMENTS :

Main-plot treatments :
6 dates of sowing : D_1=15.10.1958, D_2=1.11.1958, D_3=15.11.1958, D_4=1.12.1958, D_5=15.12.1958, D_6=1.1.1959.

Sub-plot treatments :
Same as in expt. no. 58(251) on page 386.

3. DESIGN :

(i) Split-plot. (ii) (a) 6 main-plots/replication ; 6 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a) 35′×24′. (b) 33′×22′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Heavy attack of rust. (iii) Grain and straw yield. (iv) (a) 1958—N.A. (b) No. (c) Nil (v) (a) Purnea, Piprakothi, Pusa and Saharsa. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 718 lb./ac. (ii) (a) 343.9 lb./ac. (b) 209.0 lb./ac. (iii) Interaction D×V is highly significant. Main effects of D and V are significant. (iv) Av. yield of grain in lb./ac.

	V_1	V_2	V_3	V_4	V_5	V_6	Mean
D_1	710	378	640	643	772	957	683
D_2	617	1111	1049	1019	833	1019	941
D_3	1296	1080	987	802	949	1451	1094
D_4	1092	1111	571	987	741	432	822
D_5	818	679	278	278	370	185	435
D_6	594	629	93	340	262	93	335
Mean	855	831	603	678	655	690	718

S.E. of difference of two

1. D marginal means = 114.6 lb./ac.
2. V marginal means = 69.7 lb./ac.
3. V means at the same level of D = 170.7 lb./ac.
4. D means at the same level of V = 193.4 lb./ac.

Crop :- Wheat ***(Rabi).*** **Ref :- Bh. 59(95).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'CV'.**

Object :—To find the effect of different dates of sowing on different varieties of Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) Nil. (ii) (a) Clayey loam. (b) N.A. (iii) As per treatments. (iv) (a) 3 ploughings. (b) Behind the plough. (c) 40 srs/ac. (d) 10" between rows. (e) —. (v) 40 lb./ac. of N as A/S+40 lb./ac. P_2O_5 as Super. (vi) As per treatments. (vii) Irrigated. (viii) 2 weedings by hand hoe. (ix) 3.02". (x) 24.3.1960 to 12.4.1960.

2. TREATMENTS :

Main-plot treatments :

5 dates of sowing : D_1=1.11.1959, D_2=15.11.1959, D_3=1.12.1959, D_4=15.12.1959 and D_5=1.1.1960.

Sub-plot treatments :

Same as in expt. no. 58(251) on page 386.

3. DESIGN :

(i) Split-plot. (ii) (a) 5 main-plots/replication ; 6 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 20'×27'. (v) N.A. (v) Yes.

4. GENERAL :

Same as in expt. no. 58(251) on page 386.

5. RESULTS :

(i) 548 lb./ac. (ii) (a) 140.6 lb./ac. (b) 130.3 lb./ac. (iii) Main effects of D, V and interaction D×V are highly significant. (iv) Av. yield of grain in lb./ac.

	V_1	V_2	V_3	V_4	V_5	V_6	Mean
D_1	920	267	595	608	774	425	598
D_2	1272	595	567	788	677	411	718
D_3	677	747	457	581	636	429	588
D_4	664	677	539	622	587	356	574
D_5	332	290	221	270	270	197	264
Mean	773	515	476	574	589	364	548

S.E. of difference of two

1. D marginal means = 46.9 lb./ac.
2. V marginal means = 47.6 lb./ac.
3. V means at the same level of D = 106.4 lb./ac.
4. D means at the same level of V = 107.8 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 59(81).**

Site :- Distt. Agri. Farm, Saharsa. **Type :- 'CV'.**

Object :—To find out the effect of different dates of sowing on different varieties of Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy seedlings. (c) 85 srs/ac. of A/S+85 srs./ac. of Super. (ii) (a) Sandy loam. (b) N.A. (iii) As per treatments. (iv) (a) 8 ploughings (b) Behind the plough. (c) 80 lb./ac. (d) 10" between rows. (e) —. (v) 15 C.L./ac. of F.Y.M. (vi) As per treatments. (vii) Irrigated. (viii) 2 weedings by *khurpi*. (ix) Nil. (x) 2, 3, 4, 6 and 15.4.1960.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 6 varieties of Wheat : V_1=NP—798, V_2=NP—799, V_3=BR—319, V_4=NP—761 V_5=NP—710 and V_6=NP—52.

(2) 4 dates of sowing D_1=15.11.1959, D_2=1.12.1959, D_3=15.12.1959 and D_4=1.1.1960.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 24. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 33'×16½'. (v) 3'×2'. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1959—1960. (b) No. (c) Nil. (v) (a) Piprakothi Purnea, Pusa and Sabour. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1032 lb./ac. (ii) 119.9 lb./ac. (iii) Main effect of D alone is highly significant. (iv) Av. yield of grain in lb./ac.

	V_1	V_2	V_3	V_4	V_5	V_6	Mean
D_1	1364	1145	1275	1124	1371	1262	1257
D_2	1519	1454	1474	1399	1385	1166	1400
D_3	1035	1015	1063	1049	850	967	997
D_4	507	405	494	576	415	446	474
Mean	1106	1005	1077	1037	1005	960	1032

S.E. of D marginal mean = 28.3 lb./ac.
S.E. of V marginal mean = 34.6 lb./ac.
S.E. of body of table = 69.2 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 58(2).**

Site :- Agri. Res. Instt., Patna. **Type :- 'CM'.**

Object :—To study the various factors contributing to maximising the yield of Wheat.

1. BASAL CONDITIONS :

(i) (a) Paddy—Wheat—Sugarcane. (b) Paddy. (c) 1 md./ac. of A/S. (ii) Heavy clay. (b) Refer soil analysis, Patna. (iii) Replication Ist on 4.12.1958 and others on 28.12.1958. (iv) (a) to (d) As per treatments. (v) Nil. (vi) NP—799 (early). (vii) Irrigated. (viii) 1 hoeing and weeding done with hand hoe. (ix) 3.05". (x) 9.4.1959.

2. TREATMENTS :

All combinations of (1), (2), (3) and (4)

(1) 2 manurial treatments : M_1=No fertilizer and M_2=1½ mds/ac. of A/S+3 mds/ac. of Super and 1½ mds/ac. of Mur. Pot.
(2) 2 seed rates : S_1=20 srs/ac. and S_2=40
(3) 2 methods of sowing : L_1=Broadcast and L_2=Sowing in lines 9″ apart.
(4) 2 seed dressings : D_1=No seed dressing and D_2=seed dressing with Agrosan G.N.

3. DESIGN :

(i) 2^4 partially confd. (ii) (a) 8 plots/block and 2 blocks/replication. (b) N.A. (iii) 3. (iv) (a) 63′×21′. (b) 60′×18′. (v) Yes ; Details N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Infestation of leaf rust ; no control measures taken. (iii) Yield of grain and straw. (iv) (a) 1958—N.A. (b) No. (c) Nil. (v) (a) Sabour and Pusa. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1040 lb./ac. (ii) 145.1 lb./ac. (iii) No effect is significant. (iv) Table of mean and differential responses in lb./ac.

	Mean response	S				D		M	
		—	+	—	+	—	+	—	+
S	—22.9	—	—	—43.1	—2.6	7.1	—52.9	46.4	
L	13.9	—6.9	34.1	—	—	—15.4	43.1	36.4	— 8.6
D	13.1	43.1	—16.9	—16.1	42.4	—	—	31.9	— 5.6
M	109.1	178.4	39.9	86.6	131.6	127.9		—	—

S.E. of mean response = 41.9 lb./ac.
S.E. of differential response = 59.2 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 58(310).**
Site :- Agri. Res. Instt., Pusa. **Type :- 'CM'.**

Object :—To study the various factors contributing to maximising the yield of Wheat.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—*Moong*—Wheat. (b) *Moong*. (c) Nil. (ii) (a) light loam. (b) N.A. (iii) 23.11.1958. (iv) (a) 1 tractor ploughing followed by 3 *desi* ploughings. (b) to (d) As per treatments. (e) 1 to 2. (v) Nil. (vi) NP—799. (vii) Irrigated. (viii) 1 weeding by *khurpi*. (x) 46.0″. (ix) 15 to 17.4.1959.

2. TREATMENTS :

All combinations of (1), (2), (3) and (4)

(1) 2 methods of sowing : L_1=Broadcast and L_2=Line sowing ; lines 9″ apart.
(2) 2 seed rates : S_1=20 and S_2=40 lb./ac.
(3) 2 fertilizers : M_1=No fertilizer and M_2=40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super.
(4) 2 seed dressings : D_0=No seed dressing and D_1=Seed dressing with Agroson.

3. DESIGN :

(i) 2^4 partially confd. (ii) (a) 8 plots/block ; 2 blocks/replication. (b) N.A. (iii) 3. (iv) (a) 63′×21′. (b) 60′×18′. (v) 1½′×1½′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Attack of brown rust. No control measures taken. (iii) Grain and straw yield. (iv) (a) 1958—1960. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS

(i) 1064 lb./ac. (ii) 263.2 lb./ac. (iii) M, S and M×D interaction effects are highly significant. D effect is significant. (iv) Table of mean and differential responses in lb./ac.

	Mean response	M		S		L		D	
		—	+	—	+	—	+	—	+
M	298.3	—	—	374.4	222.2	210.1	386.6	500.8	95.9
S	—170.8	—94.7	—246.8	—	—	—235.9	—105.7	—146.6	—194.9
L	10.1	—78.2	98.3	75.2	— 55.0	—	—	51.3	— 31.1
D	—135.2	67.2	—337.7	—111.08	—159.4	—94.0	—176.4	—	—

S.E. of mean response = 76.0 lb./ac.
S.E. of differential response = 107.4 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 59(235).**

Site :- Agri. Res. Instt., Pusa. **Type :- 'CM'.**

Object :—To study the various factors contributing to maximising the yield of Wheat.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—*Sanai*—Wheat. (b) *Sanai*. (c) Nil. (ii) (a) Light loam. (b) N.A. (iii) 19 to 21.11.1959. (iv) (a) 1 tractor ploughing followed by 3 *desi* ploughings. (b) to (d) As per treatments. (e) N.A. (v) Nil. (vi) NP—799. (vii) Irrigated. (viii) 1 weeding by *khurpi*. (ix) 18.0". (x) 11 to 13.4.1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(310) on page 393.

5. RESULTS :

(i) 1018 lb./ac. (ii) 392.3 lb./ac. (iii) Main effects of M and S are highly significant. Interaction M×S×D is significant. Other effects are not significant. (iv) Table of mean and differential responses in lb./ac.

	Mean response	M		S		L		D	
		—	+	—	+	—	+	—	+
M	630.2	—	—	678.0	582.3	719.2	541.1	578.9	681.4
S	—165.5	—117.6	—213.4	—	—	—215.1	—116.0	—143.7	—187.4
L	— 50.4	38.7	—139.5	— 100.0	—0.8	—	—	19.3	—120.2
D	10.9	—40.3	62.2	32.8	—10.9	80.7	— 58.8	—	—

S.E. of differential response = 113.3 lb./ac.
S.E. of mean response = 80.1 lb./ac.

Crop :- Wheat. *(Rabi)*. **Ref :- Bh. 59(209).**

Site :- Irrigation Res. Stn., Bikramganj. **Type :- 'I'.**

Object :—To find out the critical stage of soil moisture for irrigating the Wheat crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 40 lb./ac. of N as A/S+4o lb./ac. of P_2O_5 as Super. (ii) (a) N.A. (b) Refer soil analysis, Bikramganj. (iii) 17, 18.11.1959. (iv) (a) 5 ploughings by *desi* plough followed by planking. (b) Behind the plough. (c) 30 srs./ac. (d) Rows 1′ apart (e) —. (v) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super, ½ before sowing and ½ one month later. (vi) NP—799. (vii) N.A. (viii) 2 weedings by *khurpi.* (ix) 2.65″. (x) 31.3.1960.

2. TREATMENTS :

I_1=1st irrigation after one month of sowing and 2nd at pre-flowering.
I_2=Irrigation at 30% of available soil moisture.
I_3=Irrigation at 40% of available soil moisture.
I_4=Irrigation at 50% of available soil moisture.
I_5=Irrigation at 60% of available soil moisture.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 8. (iv) (a) 68′×10′. (b) 64′×6′. (v) 2′×2′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1959—N.A. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2080 lb./ac. (ii) 171.83 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	I_1	I_2	I_3	I_4	I_5
Av. yield	1741	2111	2182	2182	2186

S.E./mean = 60.75 lb./ac.

Crop :- Wheat (*Rabi*). **Ref :- Bh. 57(227).**
Site :- Irrigation Res. Stn.,Bikramganj. **Type :- 'I'.**

Object :—To determine the best method and frequency of irrigation required for high yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy loam. (b) Refer soil analysis, Bikramganj. (iii) 21, 22.11.1957. (iv) (a) 4 ploughings. (b) Behind the plough. (c) 40 srs./ac. (d) Between rows 1′. (e) —. (v) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (vi) NP—52. (vii) As per treatments. (viii) 2 weedings. (ix) 1.05″. (x) 5, 6.4.1958.

2. TREATMENTS :

Main-plot treatments :
2 methods of irrigation : M_1=Border method and M_2=Furrow method.
Sub-plot treatments :
5 irrigations : I_0=No irrigation, I_1=One pre-sowing irrigation. I_2=I_1+one irrigation one month after sowing, I_3=I_2+one irrigation at pre-flowering stage and I_4=I_3+one irrigation at post-flowering.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication ; 5 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 94′×7½′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Grain and straw yield. (iv) (a) No. (b) and (c) —. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1164 lb./ac. (ii) (a) 217.6 lb./ac. (b) 214.9 lb./ac. (iii) Main effect of I is highly significant. (iv) Av. yield of grain in lb./ac.

	I_0	I_1	I_2	I_3	I_4	Mean
M_1	491	951	1321	1517	1362	1128
M_2	707	1235	1311	1321	1426	1200
Mean	599	1093	1316	1419	1394	1164

S.E. of difference of two

1. M marginal means = 68.8 lb./ac.
2. I marginal means = 107.5 lb./ac.
3. I means at the same level of M = 152.0 lb./ac.
4. M means at the same level of I = 152.3 lb./ac.

Crop :- Wheat *(Rabi)*.. **Ref :- Bh. 59(144).**
Site :- Irrigation Res. Stn. Madhepura. **Type :- 'I'.**

Object :—To study the effect of irrigations on the yield of Wheat.

1. BASAL CONDITIONS :

(i) (a) Wheat—Paddy—Wheat. (b) Paddy. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Madhepura. (iii) N.A. (iv) (a) 5 ploughings. (b) Line sowing. (c) 40 srs./ac. (d) Lines 10" apart. (e) —. (v) 60 lb./ac. of N as A/S+60 lb./ac. of P_2O_5 as Super. (vi) NP—761. (vii) As per treatments. (viii) 1 hoeing and weeding. (ix) 1.55". (x) 3.4.1960.

2. TREATMENTS :

4 Irrigations : I_0=Control (no irrigation), I_1= One irrigation 30 days after sowing, $I_2=I_1+$one irrigation at pre-flowering stage and $I_3=I_2+$one irrigation 15 days after flowering.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) 100'×11'. (b) 98'×9'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1958—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1614 lb./ac. (ii) 186.0 lb. /ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	I_0	I_1	I_2	I_3
Av. yield	1528	1492	1626	1811

S.E./mean = 83.2 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 59(145).**
Site :- Irrigation Res. Stn. Madhepura. **Type :- 'I'.**

Object :—To study the effect of irrigations on the yield of wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Madhepura. (iii) 27.11.1959. (iv) (a) 6 ploughings. (b) Line sowing. (c) 35 srs./ac. (d) Lines 10" apart. (e) N.A. (v) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (vi) NP—761. (vii) As per treatments. (viii) 1 hoeing and weeding. (ix) 1.5". (x) 4.4.1960.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 59(144) above.

4. GENERAL :

(i) and (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1958—contd. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1186 lb./ac. (ii) 154.7 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	I_0	I_1	I_2	I_3
Av. yield	963	1270	1354	1158

S.E./mean = 69.2 lb./ac.

Crop :- Wheat. *(Rabi).* **Ref :- Bh. 58(213).**

Site :- Irrigation Res. Stn. Madhepura. **Type :- 'I'.**

Object :—To study the effect of irrigations on the yield of Wheat.

1. BASAL CONDITIONS :

(i) (a) Wheat—Paddy—Wheat. (b) Fallow. (c)—. (ii) (a) Sandy loam. (b) Refer soil analysis, Madhepura. (iii) 2.12.1958. (iv) (a) 6 ploughings. (b) Line sowing. (c) 40 srs./ac. (d) Lines 10" apart. (e) N.A. (v) 60 lb./ac. of N as A/S+60 lb./ac. of P_2O_5 as Super. (vi) NP—761. (vii) As per treatments. (viii) 1 hoeing and weeding. (ix) 3.10". (x) 28.2.1959.

2. TREATMENTS :

5 irrigations : I_0=Control (no irrigation), I_1=1 pre-sowing irrigation, $I_2=I_1+1$ irrigation 30 days after sowing, $I_3=I_2+$one irrigation at pre-flowering stage and $I_4=I_3+$one irrigation 15 days afterflowering.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 100'×11'. (b) 98'×9'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) N.A. (iii) Grain and straw yield. (iv) 1958—contd. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1739 lb./ac. (ii) 129.2 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	I_0	I_1	I_2	I_3	I_4
Av. yield	1923	1662	1762	1713	1633

S.E./mean = 64.6 lb./ac.

Crop :- Wheat *(Rabi).* **Ref :- Bh. 58(214).**

Site :- Irrigation. Res. Stn., Madhepura. **Type :- 'I'.**

Object :—To study the effect of irrigations on the yield of Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) No. (ii) (a) Sandy loam. (b) Refer soil analysis, Madhepura. (iii) 18.11.1958. (iv) (a) 6 ploughings. (b) Line sowing. (c) 35 srs./ac. (d) Between rows 10". (e) N.A. (v) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (vi) NP—761. (vii) As per treatments. (viii) Once hoeing and weeding. (ix) 3.10". (x) 19.3.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 58(213) above.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1958—contd. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1715 lb./ac. (ii) 148.9 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	I_0	I_1	I_2	I_3	I_4
Av. yield	1427	1618	1841	1872	1817

S.E./mean = 74.5 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 55(141).**

Site :- Govt. Agri. Farm, Nawadah. **Type :- 'I'.**

Object :—To find out the number of irrigations required for maximum yield of Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) G.M. (c) Nil. (ii) (a) Loam. (b) N.A. (iii) 17.11.1955. (iv) (a) 5 or 6 *desi* ploughings. (b) Behind the plough. (c) 40 srs./ac. (d) Between rows 10″. (e) —. (v) 40 lb./ac. of N as A/S+ 40 lb./ac. of P_2O_5 as Super. (vi) NP—52 (late) (vii) Irrigated. (viii) One interculturing with zig-zag harrow. (ix) 1.67″. (x) 22.3.1956.

2. TREATMENTS :

4 irrigations : I_1=Pre-sowing irrigation, $I_2=I_1+$one irrigation after a month of sowing, $I_3=I_1+I_2+$pre-flowering irrigation and $I_4=I_1+I_2+I_3+$post-flowering irrigations.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) 138′×33′. (iii) 5. (iv) (a) 33′×33′. (b) 31′8″×32′. (v) 8″×6″. (vi) Yes.

4. GENERAL :

(i) Good—no lodging. (ii) Nil. (iii) Tiller count, height and length of earhead ; Grain and straw yield. (iv) (a) and (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1022 lb./ac. (ii) 136.7 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	I_1	I_2	I_3	I_4
Av. yield	626	1015	1222	1225

S.E./mean = 61.1 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 55(119).**

Site :- Agri. Res. Stn., Patna. **Type :- 'I'.**

Object :—To find out the number of irrigation required for the maximum yield of Wheat.

1. BASAL CONDITIONS :

(i) (a) G.M.—Sugarcane—G.M.—Wheat. (b) *Sanai.* (c) 20 lb./ac. of P_2O_5 as Super. (ii) (a) Clay. (b) Refer soil analysis, Patna. (iii) 12.11.1955. (iv) (a) One or two tractor ploughings with mould board and discs harrow. (b) Sowing by *'Tara'* (seed drill). (c) 1 md./ac. (d) 1′ between rows. (e) N.A. (v) 40 lb./ac. of N as A/S and 40 lb./ac. of P_2O_5 as Super applied at sowing. (vi) N.P.—710 (early). (vii) Irrigated. (viii) Hoeing with tooth peg harrow after each irrigation. (ix) 1.36″. (x) 12, 13.4.1956.

2. TREATMENTS:

4 irrigations : I_1=Pre-sowing irrigation, I_2=Pre-sowing irrigation+irrigation a month after sowing, $I_3=I_2+$ Pre-flowering irrigation and $I_4=I_3+$One post-flowering irrigation.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) and (b) 60.5′×18′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Fair ; no lodging. (ii) Mild attack of grey rust. (iii) Yield of grain. (iv) (a) and (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1815 lb./ac. (ii) 203.6 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	I_1	I_2	I_3	I_4
Av. yield	1787	1837	1812	1825

S.E./mean = 83.1 lb./ac.

Crop :- Wheat *(Rabi).* **Ref :- Bh. 56(244).**

Site :- Irrigation Res. Sub-Stn., Bikramganj. **Type :- 'IM'.**

Object :—To determine the number of irrigations required in combination with manures for best yield of Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (ii) (a) N.A. (b) Refer soil analysis, Bikramganj. (iii) 23,24.12.1956/N.A. (iv) (a) 4 ploughings with *desi* plough. (b) Behind the plough. (c) 40 srs./ac. (d) Row to row 12″. (e) —. (v) Nil. (vi) NP—52. (vii) As per treatments. (viii) 2 weedings. (ix) 2.59″. (x) 8, 9.4.1957.

2. TREATMENTS :

Main-plot treatments :

5 irrigations : I_0=Control, I_1=One pre-sowing irrigation, $I_2=I_1$+one irrigation after one month of sowing. $I_3=I_2$+One irrigation at pre-flowering stage and $I_4=I_3$+One post-flowering irrigation.

Sub-plot treatments :

2 manurial treatments : M_0=No manure and M_1=40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super.

3. DESIGN :

(i) Split-plot. (ii) (a) 5 main-plots/replication ; 2 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 33′×27′, (b) 30′×24′. (v) 1½′×1½′. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1956—Not contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS

(i) 469 lb /ac. (ii) (a) 101.8 lb./ac. (b) 77.9. (iii) Main effect of M is highly significant. No other effect is significant. (iv) Av. yield of grain in lb./ac.

	I_0	I_1	I_2	I_3	I_4	Mean
M_1	321	303	323	296	342	317
M_2	622	593	638	653	597	621
Mean	472	448	481	475	470	469

S.E. of difference of two

1. I marginal means = 50.9 lb./ac.
2. M marginal means = 24.6 lb./ac.
3. M means at the same level of I = 55.1 lb./ac.
4. I means at the same level of M = 64.9 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 58(259).**

Site :- Irrigation. Res. Sub-Stn., Bikramganj. **Type :- 'IM'.**

Object :—To determine the influence of irrigations and fertilizers on the yield of Wheat.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Bikramganj. (iii) 7, 8.11.1958/N.A. (iv) (a) 4 ploughings. (b) Behind the plough. (c) 40 srs./ac. (d) Row to row 1′. (e) —. (v) Nil. (vi) NP—52. (vii) As per treatments. (viii) 2 weedings. (ix) 5.58″. (x) 1, 2.4.1959.

2. TREATMENTS :

Main-plot treatments :

2 manurial treatments : M_1=40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super and M_2=60 lb./ac. of N as A/S+60 lb./ac. of P_2O_5 as Super.

Sub-plot treatments :

5 irrigations : I_0=Control (no irrrigation), I_1=One pre-sowing irrigation, I_2=I_1+One irrigation 30 days after sowing, I_3=I_2+One pre-flowering irrigation and I_4=I_3+One irrigation 15 days after flowering.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication ; 5 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 96′×11½′, (b) 90′×7′. (v) N A. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1958—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1633 lb./ac· (ii) (a) 79.9 lb./ac. (b) 158·4 lb./ac. (iii) Main effect of I alone is highly significant. (iv) Av. yield of grain in lb./ac.

	I_0	I_1	I_2	I_3	I_4	Mean
M_1	1253	1224	1818	1945	1827	1613
M_2	1191	1293	1925	1918	1931	1652
Mean	1222	1259	1872	1932	1879	1633

S.E. of difference of two

1. M marginal means = 25.3 lb./ac.
2. I marginal means = 79.2 lb./ac.
3. I means at the same level of M = 112.0 lb./ac.
4. M means at the same level of I = 103.3 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 59(221).**

Site :- Irrigation Res. Sub-Stn., Bikramganj. **Type :- 'IM'.**

Object :—To determine the influence of irrigations and fertilizers on the yield of Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Bikramganj. (iii) 4, 5.11.1959/N.A. (iv) (a) 4 ploughings. (b) Behind the plough· (c) 80 lb./ac. (d) Row to row 1′. (e) —. (v) Nil. (vi) NP—52. (vii) As per treatments. (viii) 2 weedings. (ix) 2.65″. (x) 19 to 23.3.1960.

2. TREATMENTS :

Same as in expt. no. 58(259) above.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication ; 5 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 98′×11½′. (b) 94′×7½′. (v) 2′×2′. (v) Yes.

4. GENERAL

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1958—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1471 lb./ac. (ii) (a) 361.3 lb./ac. (b) 153.1 lb./ac. (iii) Main effect of I alone is highly significant. (iv) Av. yield of grain in lb./ac.

	I_0	I_1	I_2	I_3	I_4	Mean
M_1	1084	1041	1438	1485	1694	1348
M_2	1243	1199	1589	1875	2061	1593
Mean	1164	1120	1514	1680	1878	1471

S.E. of difference of two

1. M marginal means = 114.3 lb./ac.
2. I marginal means = 76.6 lb./ac.
3. I means at the same level of M = 108.3 lb./ac.
4. M means at the same level of I = 149.8 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 58(208).**

Site :- Irrigation Res. Sub-Stn., Madhepura. **Type :- 'IM'.**

Object :—To determine the efficiency of irrigation and level of critical moisture.

1. BASAL CONDITIONS:

(i) (a) Nil. (b) Fallow. (c) No. (ii) (a) Sandy loam. (b) Refer soil analysis, Madhepura. (iii) 24.11.1958/ N.A. (iv) (a) 6 ploughings. (b) Line sowing. (c) 35 srs./ac. (d) Lines 10" apart. (e) N.A. (v) Nil. (vi) NP—797. (vii) As per treatments. (viii) Hoeing and weeding once. (ix) 3.73". (x) 2.4.1959.

2. TREATMENTS:

Main-plot treatments :

2 manurial treatments : M_1=40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super and M_2=60 lb./ac. of N as A/S+60 lb./ac. of P_2O_5 as Super.

Sub-plot treatments :

6 irrigations : I_0=Control (no Irrigation), I_1=One pre-sowing irrigation, $I_2=I_1$+One irrigation 30 days after sowing, $I_3=I_2$+One pre-flowering irrigation and $I_4=I_3$+One post-flowering irrigation.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication ; 5 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 93'×12'. (b) 91'×10'. (v) 1'×1'. (vi) Yes.

4. GENERAL ;

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1958—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1990 lb./ac. (ii) (a) 318.1 lb./ac. (b) 131.8 lb./ac. (iii) Main effect of I alone is highly significant. (iv) Av. yield of grain in lb./ac.

	I_0	I_1	I_2	I_3	I_4	Mean
M_1	1677	1669	2151	2091	2103	1938
M_2	1725	1719	2252	2252	2259	2041
Mean	1701	1694	2202	2172	2181	1990

S.E. of difference of two

1. M marginal means = 100.6 lb./ac
2. I marginal means = 65.9 lb./ac.
3. I means at the same level of M = 93.2 lb./ac.
4. M means at the same level of I = 130.6 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 59(138).**

Site :- Irrigation Res. Stn., Madhepura. **Type :- 'IM'.**

Object :—To determine the efficiency of irrigation and level of critical moisture.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Madhepura. (iii) 6.12.1959/ N.A. (iv) (a) 6 ploughings. (b) Line sowing. (c) 40 srs./ac. (d) Lines 10″ apart. (e) N.A. (v) Nil. (vi) NP—799. (vii) As per treatments. (viii) Hoeing and weeding once. (ix) 1.55″. (x) 12.4.1960.

2. TREATMENTS :

Same as in expt. no. 58(208) on page 401.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication ; 5 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 92′×12′. (b) 90′×10′ (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1958—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1137 lb./ac. (ii) (a) 256.2 lb./ac (b) 173.5 lb./ac. (iii) Main effect of I alone is highly significant. (iv) Av. yield of grain in lb./ac.

	I_0	I_1	I_2	I_3	I_4	Mean
M_1	381	1106	1290	1333	1190	1060
M_2	496	1209	1490	1487	1388	1214
Mean	439	1158	1390	1410	1289	1137

S.E. of difference of two

1. M marginal means = 81.0 lb./ac.
2. I marginal means = 86.8 lb./ac.
3. I means at the same level of M = 122.7 lb./ac.
4. M means at the same level of I = 136.4 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 55(120).**

Site :- Agri. Res. Instt., Patna. **Type :- 'ICMV'.**

Object :—To find out the optimum seed rate of different varieties in combination with irrigation and manures.

1. BASAL CONDITIONS :

(i) (a) G.M.—Sugarcane—G.M. or *Jowar*—Wheat. (b) *Jowar*. (c) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super (ii) (a) Clay. (b) Refer soil analysis, Patna. (iii) 11.11.1955. (iv) (a) One or two tractor ploughings with mould board and disc. (b) Sowing by means of '*Tara*' (seed drill). (c) As per treatments. (d) 1′ between rows. (e) N.A. (v) Nil. (vi) As per treatments. (vii) Irrigated. (viii) Harrowing with tooth peg after irrigation. (ix) 1.36″. (x) 3.4.1956.

2. TREATMENTS

Main-plot treatments :

All combinations of (1) and (2)

(1) 2 levels of irrigation : I_1=Irrigation, 1st on 23,24,25.12.1955 and 2nd on 20,21.1.1956 and I_2=4 irrigations, 1st and 2nd as in I_1 and 3rd on 20,21.2.1956 and 4th—date N.A.

(2) 2 manurial treatments M_0=No manure and M_1=40 lb./ac. of N+40 lb./ac. of P_2O_5.

Sub-plot treatments :

All combinations of (1) and (2)

(1) 2 varieties : V_1=NP—52 and V_2=NP—758.

(2) 2 seed rates : R_1=60 and R_2=80 lb./ac.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/block ; 4 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a) and (b) $40.5' \times 27'$. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Fair ; no lodging. (ii) Nil. (iii) Grain yield. (iv) (a) to (c) No. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1776 lb./ac. (ii) (a) 237.8 lb./ac. (b) 213.7 lb./ac. (iii) Only the main effect of M is highly significant. (iv) Av. yield of grain in lb./ac.

	I_1	I_2	R_1	R_2	V_1	V_2	Mean
M_0	1522	1325	1403	1444	1377	1470	1424
M_1	2115	2139	2089	2165	2048	2206	2127
Mean	1819	1732	1746	1805	1713	1838	1776
V_1	1757	1668	1684	1741			
V_2	1880	1796	1808	1868			
R_1	1766	1726					
R_2	1871	1738					

S.E. of difference of two

1. I or M marginal means	=	68.6 lb./ac.
2. V or R marginal means	=	61.7 lb./ac.
3. V or R means at the same level of I or M	=	87.2 lb./ac.
4. I or M means at the same level of V or R	=	92.3 lb./ac.
5. means in the body of I×M table	=	97.1 lb./ac.
6. means in the body of R×V table	=	87.2 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 58(303).**

Site :- Expt. Farm, Jamui. **Type :- 'D'.**

Object :—To study the effect of insecticides against white ants on Wheat crop.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Calcareous. (b) N.A. (iii) 13 to 15.11.1958. (iv) (a) 4 ploughings. (b) Line sowing. (c) 40 srs./ac. (d) Between rows 1'. (e) —. (v) Nil. (vi) NP—52. (vii) Irrigated. (viii) 2 weedings. (ix) N.A. (x) 18.4.1959.

2. TREATMENTS :

3 insecticides : C_0=Control, C_1=BHC 5% at 30 lb./ac. and C_2=Aldrin 5% at 20 lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 7. (iv) (a) N.A. (b) $33' \times 16\frac{1}{2}'$. (v) N.A. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Grain and straw yield. (iv) (a) to (c) No (v) to (vii) Nil.

5. RESULTS :

(i) 761 lb./ac. (ii) 148.9 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	C_0	C_1	C_2
Av. yield	635	779	868

S.E./mean = 56.3

Crop :- Wheat ***(Rabi).*** **Ref :- Bh. 58(32).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'D'.**

Object :—To assess the effect of soaking seed in hormones on the yield of Wheat.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Paddy. (c) 40 lb./ac. of N +40 lb./ac. of P_2O_5. (ii) (a) Reddish sandy. (b) Refer soil analysis, Kanke. (iii) 3, 4.11.1958. (iv) (a) 3 ploughings. (b) Behind the plough. (c) 40 srs./ac. (d) Row to row 10". (e) —. (v) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super applied at sowing (vi) NP—798. (vii) Irrigated. (viii) 1 weeding and hoeing. (ix) 2.20". (x) 25.3.1959.

2. TREATMENTS :

All combinations of (1), (2) and (3) +a control (no soaking of seed).

(1) 2 doses of hormones : D_1=5 ppm and D_2=15 ppm.
(2) 3 hormones used for soaking seeds : H_1=I.A.A., H_2=N.A.A. and H_3=2—4—D.
(3) 2 durations of soaking : T_1=6 and T_2=12 hours.

3. DESIGN :

(i) R.B.D. (ii) (a) 13. (b) N.A. (iii) 4. (iv) (a) 12'×12'. (b) 10'×10'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield and study of individual plant characteristics. (iv) (a) 1959—1960. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 723 lb./ac. (ii) 98.7 lb./ac. (iii) Effect of T is significant. Effect of D and interactions T×H and T×D are highly significant. No other effect is significant. (iv) Av. yield of grain in lb./ac.

Control = 737 lb./ac.

	H_1	H_2	H_3	D_1	D_2	Mean
T_1	809	675	569	792	576	684
T_2	611	853	814	773	746	760
Mean	710	764	692	783	661	722
D_1	806	827	714			
D_2	614	701	669			

S.E. of H marginal mean	= 24.7 lb./ac.
S.E. of T or D marginal mean	= 20.1 lb./ac.
S.E. of body of T×H or D×H table	= 34.9 lb./ac.
S.E. of body of T×D table	= 28.4 lb./ac.
S.E. of control mean	= 49.4 lb./ac.

Crop :- Wheat ***(Rabi).*** **Ref :- Bh. 59(12).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'D'.**

Object :—To assess the effect of soaking seeds in hormones on growth and yield of grain.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Maize. (c) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (ii) (a) Reddish sandy. (b) N.A. (iii) 13, 14.11.1959. (iv) (a) 4 ploughings. (b) Behind the plough. (c) 80 lb./ac. (d) Row to row 10″. (e) —. (v) 40 lb./ac. of N as A/S+40 lb./ac. of P as Super at sowing. (vi) NP—798. (vii) Irrigated. (viii) 2 hoeings and 2 weedings. (ix) .27″. (x) 24.3.1960.

2. TREATMENTS :

All combinations of (1), (2) and (3)+2 extra treatments (TC_1, TC_2).

(1) 3 hormones used for soaking seeds : H_1=I.A.A., H_2=N.A.A. and H_3=2—4—D.
(2) 2 doses of hormones : D_1=5 ppm and D_2=15 ppm.
(3) 2 durations of seed soaking : T_1=6 hours and T_2=12 hours.
Extra treatments : CT_1 and CT_2.
where C = Control (no hormone application but seeds soaked in simple water).

3. DESIGN :

(i) R.B.D. (ii) (a) 14′. (b) N.A. (iii) 4. (iv) (a) 10′×10′. (b) 9′×9′. (v) 2′×2′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Individual plant characteristics, grain and straw yield. (iv) (a) 1958—1960. (b) No. (c) —. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 893 lb./ac. (ii) 220.5 lb./ac. (iii) Interaction D×H is highly significant and T×H is significant. No. other effect is significant. (iv) Av. yield of grain in lb./ac.

CT_1 = 753 lb./ac. and CT_2 = 775 lb./ac.

	H_1	H_2	H_3	D_1	D_2	Mean
T_1	842	880	1012	871	951	911
T_2	1027	949	780	878	959	919
Mean	935	915	896	875	955	915
D_1	877	860	888			
D_2	993	969	904			

S.E. of H marginal mean = 55.1 lb./ac.
S.E. of D or T marginal mean = 45.0 lb./ac.
S.E. of body of T×H or D×H table = 77.9 lb./ac.
S.E. of body of T×D table = 63.6 lb./ac.
S.E. of Extra treatment mean = 110.3 lb./ac.

Crop :- Wheat ***(Rabi).*** **Ref :- Bh. 59(9)**

Site :- Agri. Res. Instt., Kanke. **Type :- 'D'.**

Object :—To assess the effectiveness of foliar spray of hormones at various stages of plant growth on yield of Wheat.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Paddy. (c) 40 lb./ac. of N+40 lb./ac. of P_2O_5. (ii) (a) Reddish sandy. (b) Refer soil analysis, Kanke. (iii) 16, 17.11.1959. (iv) (a) 3 ploughings. (b) Behind the plough. (c) 40 srs./ac. (d) Row to row 10″. (e) —. (v) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super at sowing. (vi) NP—798. (vii) Irrigated. (viii) Weeding after each irrigation. (ix) 0.94″. (x) 25.3.1960.

2. TREATMENTS :

Main-plot treatments :

7 hormone treatments : T_0=Control (water sprayed), T_1=I.A.A. 25 ppm, T_2=I.A.A. 100 ppm, T_3=N.A.A. 25 ppm, T_4=N.A.A. 100 ppm, T_5=2—4—D 25 ppm and T_6=2—4—D 100 ppm.

Sub-plot treatments :

3 stages of spraying : S_1=At tillering, S_2=At preflowering and S_3=At grain filling stage.

3. DESIGN :

(i) Split-plot. (ii) (a) 7 main-plots/replication. (b) 3 sub-plots/main plot. (iii) 3. (iv) (a) 12′×12′. (b) 10′×10′. (v) 2′ between plots. (vi) Yes.

4. GENERAL :

(i) Not good. (ii) Nil. (iii) Grain and straw yield, number of tillers, earhead and height. (iv) (a) 1958—N.A. (b) Yes. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 685 lb./ac. (ii) (a) 231.2 lb./ac. (b) 190.1 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	T_0	T_1	T_2	T_3	T_4	T_5	T_6	Mean
S_1	800	669	688	601	777	661	715	702
S_2	813	602	617	671	506	591	607	630
S_3	701	687	763	629	747	722	811	723
Mean	771	653	689	634	677	658	711	685

S.E. of difference of two.

1. T marginal means = 109.0 lb./ac.
2. S marginal means = 58.6 lb./ac.
3. S means at the same level of T = 155.2 lb./ac.
4. T means at the same level of S = 167.1 lb./ac.

Crop :- Wheat ***(Rabi).*** **Ref :- Bh. 58(35).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'D'.**

Object :—To assess the effectiveness of aerial spray of hormones on the yield of Wheat.

1. BASAL CONDITIONS :

(i) (a) N A. (b) Paddy. (c) 40 lb./ac. of N+40 lb./ac. of P_2O_5. (ii) (a) Reddish sandy. (b) Refer soil analysis, Kanke. (iii) 4, 5.11.1958. (iv) 3 ploughings. (b) Behind the plough. (c) 40 srs./ac. (d) Between rows 10″. (e) —. (v) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super applied at sowing. (vi) NP—798. (vii) Irrrigated. (viii) 1 weeding and hoeing. (ix) 2.20″. (x) 10.3.1959.

2. TREATMENTS :

All combinations of (1) and (2)+a control (DoHo).

(1) 2 doses : D_1=25 ppm and D_2=100 ppm.

(2) 3 hormones sprayings : H_1=I.A.A., H_2=N.A.A. and H_3=2—4—D.

The 7 treatments applied at 3 stages of plant growth : T_1=At tillering (25.11.1958), T_2=At pre-flowering (25.1.1959) and T_3=Grain filling (15.2.1959).

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4 (for each stage). (iv) (a) 12′×12′. (b) 10′×10′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield, no. of tillers, height and no. of earheads. (iv) (a) 1958—N.A. (b) Yes. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) and (ii) As below. (iii) Treatment differences are not significant in all the three stages of plant growth (iv) Av. yield of grain in lb./ac.

	T_1	T_2	T_3
H_0D_0	713	1039	1311
H_1D_1	927	1238	1145
H_2D_1	1024	1155	1379
H_3D_1	986	1194	1437
H_1D_2	1117	1150	1199
H_2D_2	869	1112	
H_3D_2	718	1204	1160
G.M.	908	1156	1276
S.E./plot	199.1	238	203.7
S.E./mean	99.6	119	101.8

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 55(121).**

Site :- Agri. Res. Instt., Patna. **Type :- 'D'.**

Object :—To test the effect of pre-soaking of seed in nutrient solutions.

1. BASAL CONDITIONS:

(i) (a) G.M.—Sugarcane—G.M.—Wheat. (b) G.M. (c) 20 lb./ac. of P_2O_5 as Super. (ii) (a) Clay. (b) Refer soil analysis, Patna. (iii) 8.11.1955. (iv) (a) Land prepared by tractor ploughing (mould board and disc-harrow). (b) Sowing by *Tara* (seed drill) (c) 1 md./ac. (d) 1′ between rows e) —. (v) Nil. (vi) NP—758 (medium). (vii) Irrigated. (viii) Hoeing with tooth-peg harrow after one irrigation. (ix) 1.36″. (x) 5 4.1956.

2. TREATMENTS :

3 nutrient solutions used for soaking seeds : S_0=Control (no soaking), S_1=Soaking with K_2HPO_4, and S_2=Soaking with water equivalent to the amount used in S_1.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 4. (iv) (a) and (b) 60.5′×18′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Slight attack of brown-rust. (iii) Biometric observations and grain yield. (iv) (a) 1955—N.A. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 982 lb./ac. (ii) 246.8 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	S_0	S_1	S_2
Av. yield	951	1153	842

S.E./mean = 123.4 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 57(148).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'D'.**

Object :—To find out effective weedicides for Wheat crop.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) and (b) N.A. (iii) 15.11.1957. (iv) (a) 3 ploughings. (b) Behind the plough. (c) 40 srs./ac. (d) Rows 10″ apart. (e) —. (v) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (vi) NP—52 (late). (vii) Irrigated. (viii) 1 weeding. (ix) 0.35″. (x) 13.4.1958.

2. TREATMENTS :

All combinations of (1) and (2)+2 extra treatments.

(1) 4 weedicides : W_1=Fernoxone, W_2=Chloroxone, W_3=Sportex and W_4=Tropotex.

(2) 2 levels of weedicides : $L_1=\frac{3}{4}$ lb./ac. and $L_2=1\frac{1}{2}$ lb./ac. of acid equivalent.

The extra treatments : E_0=Control (no weedicide or weeding) and E_1=One weeding.

3. DESIGN :

(i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 4. (iv) (a) 29′×22′. (b) 27′×20′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1957—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1092 lb./ac. (ii) 154.2 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

E_0=943 lb./ac. and E_1=1019 lb./ac.

	W_1	W_2	W_3	W_4	Mean
L_1	1054	1112	1311	1122	1150
L_2	1036	1155	1130	1036	1089
Mean	1045	1134	1221	1079	

S.E. of W marginal mean = 54.5 lb./ac.
S.E. of L marginal mean = 38.5 lb./ac.
S.E. of body of table or extra treatment mean = 77.1 lb./ac.

Crop :- Wheat *(Rabi)*. **Ref :- Bh. 58(152).**
Site :- Agri. Res. Instt., Sabour. **Type :- 'D'.**

Object :—To find out effective weedicides for Wheat crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Maize. (c) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (ii) (a) and (b) N.A. (iii) 20.11.1958. (iv) (a) 4 ploughings. (b) Behind the plough. (c) 80 lb./ac. (d) Row to row 10″. (e) —. (v) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super at sowing. (vi) NP—799. (vii) Irrigated. (viii) As per treatments. (ix) 4.03″. (x) 2, 3.4.1959.

2. TREATMENTS :

Same as in expt. no. 57(148) on page 407.

3. DESIGN :

(i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 4. (iv) (a) 29½′×22′. (b) 27′×20′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Attack of Wheat stem-borer, mild attack of brown-rust—0.2% Endrin sprayed. (iii) Grain and straw yield. (iv) (a) 1957—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1310 lb./ac. (ii) 257.5 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

E_0 = 1168 lb./ac. and E_1 = 1473 lb./ac.

	W_1	W_2	W_3	W_4	Mean
L_1	1168	1530	1177	1432	1327
L_2	1292	1316	1226	1316	1287
Mean	1230	1423	1202	1374	1307

S.E. of W marginal means = 91.0 lb./ac.
S.E. of L marginal mean = 64.4 lb./ac.
S.E. of body of table or extra treatment mean = 128.7 lb./ac.

Crop :- Wheat ***(Rabi).*** **Ref :- Bh. 59(91).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'D'.**

Object :—To find out effective weedicides for Wheat.

1. BASAL CONDITIONS :

(i) and (ii) N.A. (iii) 16.11.1959. (iv) (a) 4 ploughings. (b) Behind the plough. (c) 80 lb./ac. (d) Row to row 10". (e) —. (v) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 at sowing in furrows. (vi) NP—799. (vii) Irrigated. (viii) As per treatments. (ix) 1.5". (x) 21.3.1960.

2. TREATMENTS :

Same as in expt. no. 57(148) on page 407.
For E_1 weeding done on 20.12.1959.

3. DESIGN :

(i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 22'×23'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1957—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 464 lb./ac. (ii) 129.7 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

E_0 = 453 lb./ac. and E_1 = 534 lb./ac.

	W_1	W_2	W_3	W_4	Mean
L_1	451	465	493	398	452
L_2	459	437	509	443	461
Mean	455	451	501	421	457

S.E. of W marginal mean = 45.8 lb./ac.
S.E. of L marginal mean = 32.4 lb./ac.
S.E. of body of table or extra treatment mean = 64.8 lb./ac.

Crop :- Jowar ***(Kharif).*** **Ref :- Bh. 57(167)**

Site :- Distt. Agri. Farm, Monghyr. **Type :- 'M'.**

Object :—To study the effect of N and P on Jowar.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Gram. (c) Nil. (ii) (a) Clayey loam. (b) N.A. (iii) 19, 20.8.1957, (iv) (a) 4 ploughings. (b) Behind the plough. (c) 10 srs./ac. (d) 15″ between rows. (e) —. (v) Nil. (vi) Local. (vii) Unirrigated. (viii) 1 weeding. (ix) 23.2″. (x) 13, 16.12.1957.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 4 levels of N as A/S : $N_0=0$, $N_1=20$, $N_2=40$ and $N_3=60$ lb./ac.
(2) 4 levels of P_2O_5 as Super : $P_0=0$, $P_1=20$, $P_2=40$ and $P_3=60$ lb./ac.

3. DESIGN :

(i) Fact in R.B.D. (ii) (a) 16. (b) N.A. (iii) 4. (iv) (a) 36′×24′. (b) 33′×22′. (v) 1½′×1′. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) (a) Piprakothi and Sepaya. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 584 lb./ac. (ii) 375.2 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	P_3	Mean
N_0	291	320	29	25	407
N_1	495	517	581	474	517
N_2	731	665	858	557	703
N_3	584	698	984	571	709
Mean	525	550	679	582	584

S.E. of any marginal mean = 93.8 lb./ac.
S.E. of body of table = 187.6 lb./ac.

* * *

Crop :- Jowar ***(Kharif).*** **Ref :- Bh. 58(165).**
Site :- Distt. Agri. Farm, Monghyr. **Type :- 'M'.**

Object :—To study the effect of N and P on Jowar.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Jowar* (fodder). (c) 1 md./ac. of Super+20 srs./ac. of A/S. (ii) (a) Clayey loam. (b) N.A. (iii) 25, 26.8.1958. (iv) (a) 4 ploughings. (b) Behind the plough. (c) 10 srs./ac. (d) 15″ between rows. (e) —. (v) Nil. (vi) Local. (vii) Unirrigated. (viii) 1 weeding. (ix) 22.9″. (x) 24 to 29.12.1958.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 57(167) on page 409.

5. RESULTS :

(i) 871 lb./ac. (ii) 191.3 lb./ac. (iii) Main effect of N alone is highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	P_3	Mean
N_0	544	602	683	449	570
N_1	976	825	804	700	826
N_2	862	881	918	1028	922
N_3	1180	1234	985	1264	1166
Mean	891	886	848	860	871

S.E. of any marginal mean = 47.8 lb./ac.
S.E. of body of table = 95.7 lb./ac.

Crop :- Jowar *(Kharif)*. **Ref :- Bh. 57(144).**

Site :- Govt. Agri. Farm., Piprakothi. **Type :- 'M'.**

Object :—To study the effect of N and P on Jowar.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Wheat. (c) 7 mds/ac. of castor cake+1½ mds/ac. of Super. (ii) (a) Sandy loam. (b) N.A. (iii) N.A. (iv) (a) 2 ploughings by Bihar plough and 1 by *desi* plough. (b) Broadcast. (c) 10 srs/ac. (d) and (e) —. (v) Nil. (vi) Local. (vii) Unirrigated. (viii) 1 interculturing by country plough. (ix) and (x) N.A.

2. TREATMENTS :

Same as in expt. no. 57(167) on page 409.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 16. (b) N.A. (iii) 4. (iv) (a) 42′4″×30′. (b) 40′4″×27′. (v) 1′×1½′. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) Attack of Stem-borer. Stem-borers removed. (iii) Grain yield. (iv) (a) 1956—1957. (b) No. (c) Nil. (v) (a) Monghyr and Sepaya. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 226.1 lb./ac. (ii) 127.3 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of *jowar* in lb./ac.

	P_0	P_1	P_2	P_3	Mean
N_0	374.0	164.3	229.0	185.0	238.1
N_1	148.8	137.2	213.5	311.9	202.9
N_2	198.0	262.7	161.8	292.4	228.7
N_3	205.7	273.0	230.3	229.0	234.5
Mean	231.6	209.3	208.6	254.6	226.1

S.E. of any marginal mean = 31.8 lb./ac.
S.E. of body of table = 63.7 lb./ac.

Crop :- Jowar *(Kharif)*. **Ref :- Bh: 56(117).**

Site :- Bot. Sub-Stn., Sepaya. **Type :- 'M'.**

Object :—To study the effect of N and P on Jowar.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Sugarcane. (c) N.A. (ii) (a) Clayey loam. (b) N.A. (iii) 16.6.1956. (iv) (a) 3 ploughings. (b) Behind the plough. (c) 10 srs./ac. (d) 15″ between rows. (e) —. (v) 200 md./ac. of compost before sowing. (vi) Local. (vii) Unirrigated. (viii) One hoeing and one weeding. (ix) 38.5″. (x) 4 to 6.10.1956.

2. TREATMENTS :

Same as in expt. no. 57(167) on page 409.

3. DESIGN :

(i) R.B.D. (ii) (a) 16. (b) N.A. (iii) 4. (iv) (a) and (b) 36′×15′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) N.A. (iii) Grain yield. (iv) (a) 1956—1957. (b) No. (c) Nil. (v) (a) Monghyr and Piprakothi. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 310.9 lb./ac. (ii) 83.6 lb./ac. (iii) Main effects of N and P are highly significant. (iv) Av. yield of *Jowar* in lb./ac.

	P_0	P_1	P_2	P_3	Mean
N_0	191.7	272.1	355.0	461.2	320.0
N_1	181.4	207.3	279.9	342.0	252.6
N_2	119.2	259.1	362.8	425.0	291.5
N_3	285.0	349.8	427.5	456.1	379.6
Mean	194.3	272.1	356.3	421.1	310.9

S.E. of any marginal mean = 20.9 lb./ac.
S.E. of body of table = 41.8 lb./ac.

Crop :- Jowar *(Kharif)*. **Ref :- Bh. 57 (101).**
Site :- Govt. Agri. Farm, Sepaya. **Type :- 'M'.**

Object :—To study the effect of N and P on Jowar.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Sugarcane. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 2.7.1957. (iv) 2 ploughings by country plough. (b) Behind the plough. (c) 10 srs./ac. (d) 15" between rows. (e) —. (v) Nil. (vi) Local. (vii) Unirrigated. (viii) Nil. (ix) 36.9". (x) 2.1.1958.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 56(117) on page 411.

5. RESULTS :

(i) 246.8 lb./ac. (ii) 70.8 lb./ac. (iii) Main effects of N and P are highly significant. (iv) Av. yield of *jowar* in lb./ac.

	P_0	P_1	P_2	P_3	Mean
N_0	124.5	225.7	262.0	306.1	229.6
N_1	184.2	186.8	246.4	228.3	211.4
N_2	127.1	197.1	321.7	352.8	249.7
N_3	290.5	254.2	282.7	358.0	296.4
Mean	181.6	216.0	278.2	311.3	246.8

S.E. of any marginal mean = 17.7 lb./ac.
S.E. of body of table = 35.4 lb./ac.

Crop :- Jowar *(Kharif)*. **Ref :- Bh. 58(126).**
Site :- Govt. Agri. Farm, Sepaya. **Type :- 'M'.**

Object :—To study the effect of N and P on Jowar.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Sugarcane. (c) 2½ mds/ac. of A/S+2½ mds/ac. of Super. (ii) (a) Sandy loam. (b) N.A. (iii) 2 7.1958. (iv) (a) 2 ploughings by Bihar plough. (b) Behind the plough. (c) 30 srs./ac. (d) 1′ between rows. (e) —. (v) Nil. (vi) Local. (vii) Unirrigated. (viii) 1 weeding. (ix) N.A. (x) 11.12.1958.

2. TREATMENTS :

Same as in expt. no. 57 (167) on page 409.

3. DESIGN :

(i) R.B.D. (ii) (a) 16. (b) N.A. (iii) 5. (iv) (a) 62′×11′. (b) 60′×9′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Very poor. (ii) Nil. (iii) Grain yield. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) (a) Monghyr and Piprakothi. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 339.8 lb./ac. (ii) 104.1 lb./ac. (iii) Main effects of N and P are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	P_3	Mean
N_0	129.0	145.2	129.0	209.7	153.2
N_1	177.4	242.0	322.7	371.0	278.3
N_2	306.5	419.4	871.0	483.9	520.2
N_3	322.6	451.6	483.9	371.0	407.3
Mean	233.9	314.6	451.7	358.9	339.8

S.E. of any marginal means = 23.3 lb./ac.
S.E. of body of table = 46.5 lb./ac.

Crop :- Barley *(Rabi).* **Ref :- Bh. 58, 59(13).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'M'.**

Object :—To study the effect of N, P, K and lime on Barley.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Red laterite. (b) Refer soil analysis, Kanke. (iii) Last week of Oct. (iv) (a) 4 ploughings with *desi* plough. (b) Line sowing. (c) N.A. (d) 10″ between rows. (e) —. (v) N.A. (vi) BR—22. (vii) Irrigated. (viii) Hoeing and weeding. (ix) N.A. (x) 1st week of March.

2. TREATMENTS :

1. Control.
2. 3600 lb./ac. of lime.
3. 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super+40 lb./ac. of K_2O as Mur. Pot.
4. Treatment 3+3600 lb./ac. of lime.

Lime applied in 1958 only. Residual effect of lime studied in subsequent years.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) 14′×20′. (b) 12′×18′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Nil. (iii) Grain yield. (iv) (a) 1958—1960. (b) Yes. (c) Nil. (v) to (vii) Nil.

RESULTS :

1958

(i) 940 lb./ac. (ii) 176.7 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4
Av. yield	197	597	1115	1851

S.E./mean = 79.0 lb./ac.

(i) 1468 lb./ac. (ii) 223.3 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4
Av. yield	509	859	2170	2335

S.E./mean = 99.9 lb./ac.

Crop :- Barley *(Rabi).* **Ref :- Bh. 56(238).**

Site :- Irrigation Res. Sub-Stn., Bikramganj. **Type :- 'I'.**

Object :—To find out number and method of irrigations for Barley.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Aman* Paddy. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 21, 22.12.1956. (iv) (a) 4 ploughings by *desi* plough. (b) Line sowing. (c) 40 srs./ac. (d) 12″ between rows. (e) 1. (v) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (vi) BR—22. (vii) As per treatments. (viii) 2 weedings and 2 hoeings. (ix) 2.3″. (x) 15.4.1957.

2. TREATMENTS :

3 levels of irrigation : I_0=No irrigation, I_1=One irrigation at pre-flowering and I_2=Two irrigations, first a month after sowing and other at post-flowering.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 7. (iv) (a) 57′×19′. (b) 53′×15′. (v) 2′×2′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) No. (b) and (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 538 lb./ac. (ii) 87.6 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of barley in lb./ac.

Treatment	I_0	I_1	I_2
Av. yield	514	487	614

S.E./mean = 33.1 lb./ac.

Crop :- Barley *(Rabi).* **Ref :- Bh. 57(259).**

Site :- Irrigation Res. Sub-Stn., Bikramganj. **Type :- 'I'.**

Object :—To find out number and method of irrigations for Barley.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 15, 16.12.1957. (iv) (a) 4 ploughings by country plough. (b) Behind the plough. (c) 40 srs./ac. (d) 1′ between rows. (e) 1. (v) 40 lb./ac. of N as A/S+40 lb /ac. of P_2O_5 as Super. (vi) BR—22. (vii) As per treatments. (viii) 1 weeding by *khurpi* (ix) 1.00″. (x) 5, 6.4.1958.

2. TREATMENTS :

Main-plot treatments :

2 methods of irrigation : M_1=Border and M_2=Furrow.

Sub-plot treatments :

4 number of irrigations : I_0=No irrigation, I_1=One irrigation at pre-sowing, I_2=I_1+One irrigation 45 days after sowing and I_3=I_2+one irrigation before flowering.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication ; 4 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 90′×14′. (b) 86′×10′. (v) 2′×2′. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) Nil. (iii) Grain yield. (iv) (a) 1957—1958. (b) and (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 624.5 lb./ac. (ii) (a) 297.8 lb./ac. (b) 448.4 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of barley in lb./ac.

	I_0	I_1	I_2	I_3	Mean
M_1	391.5	564.1	698.4	811.5	616.4
M_2	410.2	603.1	737.4	779.8	632.6
Mean	400.8	583.6	717.9	795.7	624.5

S.E. of difference of two

1. M marginal means = 105.3 lb./ac.
2. I marginal means = 224.2 lb./ac.
3. I means at the same level of M = 317.1 lb./ac.
4. M means at the same level of I = 294.1 lb./ac.

Crop :- Barley ***(Rabi).*** **Ref :- Bh. 58(260).**

Site :- Irrigation Res. Sub-Stn., Bikramganj. **Type :- 'I'.**

Object :—To find out number and method of irrigations for Barley.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy loam. (b) N.A. (iii) 8, 9.12.1958. (iv) (a) 4 ploughings with *desi* plough. (b) Behind the plough. (c) 40 srs./ac. (d) 1′ between rows. (e) —. (v) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (vi) BR—22. (vii) As per treatments. (viii) 1 weeding. (ix) 5.58″. (x) 2, 3.4.1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 57(259) on page 414.

5. RESULTS :

(i) 1079 lb./ac. (ii) (a) 209.1 lb./ac. (b) 254.5 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of barley in lb./ac.

	I_0	I_1	I_2	I_3	Mean
M_1	981	1086	853	1114	1009
M_2	951	1358	1295	991	1149
Mean	966	1222	1074	1053	1079

S.E. of difference of two

1. M marginal means = 73.9 lb./ac.
2. I marginal means = 127.3 lb./ac.
3. I means at the same level of M = 180.0 lb./ac.
4. M means at the same level of I = 172.5 lb./ac.

Crop :- Barley *(Rabi)*. **Ref :- Bh. 57(202).**

Site :- Irrigation Res. Stn., Madhepura. **Type :- 'I'.**

Object :—To find out the number and method of irrigations for Barley.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Madhepura. (iii) 20.12.1957. (iv) (a) 4 ploughings. (b) Behind the plough. (c) 40 srs./ac. (d) 10″ between lines. (e) —. (v) Nil. (vi) BR—22. (vii) As per treatments. (viii) 1 hoeing and 1 weeding. (ix) 0.63″. (x) 4.4.1958.

2. TREATMENTS :

Main-plots treatments :

2 methods of irrigation : M_1=Border and M_2=Furrow.

Sub-plot treatments :

4 no. of irrigations : I_0=No irrigation, I_1=One irrigation at pre-sowing, $I_2=I_1$+one irrigation after 30 days of sowing and $I_3=I_2$+one irrigation at pre-flowering stage.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication, 4 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 92′×13′. (b) 90′×11′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1957—1959. (b) No. (c) Nil. (v) (a) Bikramganj. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1354 lb./ac. (ii) (a) 348.9 lb./ac. (b) 178.5 lb./ac. (iii) Main effect of I alone is highly significant. (iv) Av. yield of barley in lb./ac.

	I_0	I_1	I_2	I_3	Mean
M_1	1196	1308	1680	1470	1414
M_2	922	1168	1454	1631	1294
Mean	1059	1238	1567	1551	1354

S.E. of difference of two

1. M marginal means = 123.4 lb./ac.
2. I marginal means = 89.3 lb./ac.
3. I means at the same level of M = 126.2 lb./ac.
4. M means at the same level of I = 164.8 lb./ac.

Crop :- Barley *(Rabi)*. **Ref :- Bh. 58(206).**

Site :- Irrigation Res. Stn., Madhepura. **Type :- 'I'.**

Object :—To find out the number and method of irrigations for Barley.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) Sandy loam. (b) Refer soil analysis, Madhepura. (iii) 19.12.1958. (iv) (a) 4 ploughings. (b) Behind the plough. (c) 40 srs./ac. (d) 10″ between lines. (e) —. (v) Nil. (vi) BR—22. (vii) As per treatments. (viii) 1 hoeing and weeding. (ix) 3.63″. (x) 4.4.1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 57(202) above.

5. RESULTS :

(i) 1331 lb./ac. (ii) (a) 283.0 lb./ac. (b) 137.4 lb./ac. (iii) Main effect of I alone is significant. (iv) Av. yield of barely in lb./ac.

	I_0	I_1	I_2	I_3	Mean
M_1	1380	1495	1430	1301	1402
M_2	1032	1390	1335	1278	1259
Mean		1443	1383	1290	1331

S.E. of difference of two

1. M marginal means = 100.1 lb./ac.
2. I marginal means = 68.7 lb./ac.
3. I means at the same level of M = 97.2 lb./ac.
4. M means at the same level of I = 130.7 lb./ac.

Crop :- Barley *(Rabi).* **Ref :- Bh. 59(136).**

Site :- Irrigation Res. Stn., Madhepura. **Type :- 'I'.**

Object :—To find out the number and method of irrigations for Barley.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Madhepura. (iii) 20.12.1959. (iv) (a) 4 ploughings. (b) Behind the plough. (c) 40 srs./ac. (d) 10" between lines. (e) —. (v) Nil. (vi) BR—22. (vii) As per treatments. (viii) 1 hoeing and weeding. (ix) N.A. (x) 8.4.1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 57(202) on page 416.

5. RESULTS :

(i) 607 lb./ac. (ii) (a) 94.6 lb./ac. (b) 87.2 lb./ac. (iii) Main effect of I alone is highly significant. (iv) Av. yield of barley in lb./ac.

	I_0	I_1	I_2	I_3	Mean
M_1	209	642	775	752	595
M_2	255	668	792	764	620
Mean	232	655	784	758	6[illegible]

S.E. of difference of two

1. M marginal means = 33.4 lb./ac.
2. I marginal means = 43.6 lb./ac.
3. I means at the same level of M = 61.7 lb./ac.
4. M means at the same level of I = 63.0 lb./ac.

Crop :- Barley *(Kharif).* **Ref :- Bh. 55(219).**

Site :- Distt. Agri. Farm, Saharsa. **Type :- 'D'.**

Object :—To assess the loss in yield due to leaf strip of Barley.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 24.11.1955. (iv) (a) 5 ploughings. (b) Behind the plough. (c) 80 srs./ac. (d) 10" between rows. (v) —. (vi) BR—22. (vii) Unirrigated. (viii) One weeding by *khrupi*. (ix) N.A. (x) 22.3.1956.

2. TREATMENTS :

T_1=Control.

T_2=Seed dressing with 5 oz./56 srs. of seed with Agrosan G.N.

T_3=T_2+2 sprayings with Bordeaux mixture.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) 36′×18′. (b) 34′×16′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Grain yield. (iv) (a) No. (b) and (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 900 lb./ac. (ii) 234.5 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_1	T_2	T_3
Av. yield	1064	810	827

S.E./mean = 95.7 lb./ac.

Crop :- Maize. **Ref :- Bh. 55(46).**

Site :- Naya Dumka Farm, Dumka. **Type :- 'M'.**

Object :—To test the effect of liming the acid soils for Maize.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Maize. (c) 30 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy loam. (b) N.A. (iii) 13.7.1955. (iv) (a) 2 tractor ploughings and 2 *desi* ploughings. (b) and (c) N.A. (d) 24″×9″. (e) 2. (v) Nil. (vi) Jaunpur (early). (vii) Unirrigated. (viii) Weeding and interculturing. (ix) 24.10″. (x) 28.9.1955.

2. TREATMENTS :

1. Control (no manure).
2. 800 lb./ac. of lime.
3. 1600 lb./ac. of lime.
4. 2400 lb./ac. of lime.
5. Treatment 4+40 lb./ac. of N+40 lb./ac. of P_2O_5+40 lb./ac. of K_2O.
6. 40 lb./ac. of N+40 lb./ac. of P_2O_5+40 lb./ac. of K_2O.

N applied as A/S, P_2O_5 as Super and K_2O as Mur. Pot.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 5. (iv) (a) and (b) 66′×16.5′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Poor, no lodging. (b) Stem-borer attack—affected plants were removed by hand. (iii) Biometric observations and grain yield. (iv) (a) 1955—N.A. (b) No. (c) Nil. (v) (a) Jalalgarh. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 169 lb./ac. (ii) 185.1 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5	6
Av. yield	166	40	262	158	211	175

S.E./mean = 82.8 lb./ac.

Crop :- Maize. **Ref :- Bh. 55(47).**

Site :- Naya Dumka Farm, Dumka. **Type :- 'M'.**

Object :—To test the effect of potash on Maize.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Maize. (c) A/S at 30 lb./ac. of N+Super at 20 lb./ac. of P_2O_5. (ii) (a) Sandy loam. (b) N.A. (iii) 14.6.1955. (iv) (a) 2 tractor ploughings and 2 *desi* ploughings. (b) and (c) N.A. (d) 24″×9″. (e) 2. (v) Nil. (vi) Jaunpur (early). (vii) Unirrigated. (viii) Weeding and interculturing. (ix) 30.03″. (x) 5.9.1955.

2. TREATMENTS :

1. Control (no manure).
2. 40 lb./ac. of N.
3. 40 lb./ac. of N+40 lb./ac. of P_2O_5.
4. 40 lb./ac. of N+40 lb./ac. of K_2O.
5. 40 lb./ac. of N+40 lb./ac. of P_2O_5+40 lb./ac. of K_2O.

N applied as A/S, P_2O_5 as Super and K_2O as Mur. Pot.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) and (b) 66′×16.5′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Poor ; no lodging. (ii) Slight attack of top-borer—affected plants were removed by hand. (iii) Biometric observations and grain yield. (iv) (a) 1955—N.A. (b) No. (c) Nil. (v) (a) Jamui, Monghyr, Purnea, Dumka, Jalalgarh and Saharsa. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 260 lb./ac. (ii) 74.4 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5
Av. yield	91	112	406	269	424

S.E./mean = 37.2 lb./ac.

Crop :- Maize. **Ref :- Bh. 54(3).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'M'.**

Object :—To study the effect of potash on Maize.

1. BASAL CONDITIONS :

(i) (a) Maize—*Rahar*—Maize. (b) *Rahar*. (c) Liming at 1.1 mds./ac. (ii) (a) Clay. (b) Refer soil analysis, Kanke. (iii) 3.7.1954. (iv) (a) N.A. (b) Sown behind the plough. (c) 7 srs./ac. (d) 2′×1′. (e) —. (v) Nil. (vi) Kalimpong (medium). (vii) Unirrigated. (viii) Thinning, hoeing and earthing etc. (ix) 27.37″. (x)N.A.

2. TREATMENTS :

Same as in expt. no. 55(47) on page 418.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) and (b) 75′×15′. (v) Nil. (vi) Yes.

4. GENERAL:

(i) Good ; no lodging. (ii) Nil. (iii) Yield of grain and stalk. (iv) (a) and (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1028 lb./ac. (ii) 728.0 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac

Treatment	1	2	3	4	5
Av. yield	767	1404	1314	478	1175

S.E./mean = 364.0 lb./ac.

Crop :- Maize. **Ref :- Bh. 55(2).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'M'.**

Object :—To test the effect of liming the acid soil for Maize.

1. BASAL CONDITIONS :

(i) (a) *Jowar*+*Urid*—Fallow—Maize—Fallow. (b) Fallow. (c) A/S at 44 srs./ac. (ii) (a) Clay. (b) N.A. (iii) 24.6.1955. (iv) (a) N.A. (b) Sowing behind the plough. (c) 7 srs./ac. (d) 2′×1′. (e) —. (v) Nil. (vi) Kalimpong (medium). (vii) Unirrigated. (viii) 5 weedings and earthing once. (ix) 35.23″. (x) 19·10.1955 and 20.10.1955.

2. TREATMENTS :

Same as in expt. no. 55(46) on page 418.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 5. (iv) (a) and (b) 22′×49′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Poor ; no lodging. (ii) Nil. (iii) Height of plant, length of ear head and grain yield. (iv) (a) and (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) Uneven and low rainfall. (vii) Nil.

5. RESULTS :

(i) 277.8 lb./ac. (ii) 114.9. lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5	6
Av. yield	133	150	175	241	378	590

S.E./mean = 51.4 lb./ac.

Crop :- Maize. **Ref :- Bh. 55(5).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'M'.**

Object :—To test the effect of deep placement of fertilizers on Maize.

1. BASAL CONDITIONS :

(i) (a) *Jowar*+Soyabean—Mustard—Maize—Fallow. (b) Mustard. (c) A/S at 30 srs./ac.+Super 1 md./ac. (ii) (a) Clayey loam. (b) N.A. (iii) 27, 28.6.1955. (iv) (a) Ploughed by *desi* plough. (b) Sown behind the plough. (c) 7 srs./ac. (d) 2′×1′. (e) —. (v) Nil. (vi) Kalimpong (medium). (vii) Unirrigated. (viii) Weeding twice and earthing once. (ix) 30.93″. (x) 16, 17.10.1955,

2. TREATMENTS :

1. Control.
2. 40 lb./ac. of N as A/S at surface.
3. 40 lb./ac. of N as A/S at depth.
4. 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super at surface.
5. 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super at depth.
6. 40 lb./ac. of N as A/S at surface+40 lb./ac. of P_2O_5 as Super at depth.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 5. (iv) (a) and (b) 22′×49′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Medium ; no lodging. (ii) Nil. (iii) Cob and grain yield. (iv) (a) and (b) No. (c) Nil. (v) (a) Pusa, Patna, Sabour, Nawadah, Monghyr, Jamui, Purnea, Sepaya and Musheri. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 798 lb./ac. (ii) 153.7 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5	6
Av. yield	565	690	540	723	848	1421

S.E./mean = 68.7 lb./ac.

Crop :- Maize *(Kharif).* **Ref :- Bh. 58, 59(12).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'M'.**

Object :—To study the effect of N, P, K and lime on Maize.

1. BASAL CONDITIONS :

(a) to (c) N.A. (ii) (a) Red laterite. (b) Refer soil analysis, Kanke. (iii) N.A. (iv) (a) 4 ploughings with *desi* plough. (b) Line sowing. (c) N.A. (d) 1′×1′. (e) N.A. (v) N.A. (vi) Kalimpong. (vii) Unirrigated. (viii) Hoeing and weeding. (ix) and (x) N.A.

2. TREATMENTS :

1. Control (no manure).
2. 3600 lb./ac. of lime.
3. 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super+40 lb./ac. of K_2O as Mur. Pot.
4. Treatment 3+3600 lb./ac. of lime.

Lime applied only in 1958. Residual effect of lime studied in subsequent years.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) 14′×20′. (b) 12′×18′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Nil. (iii) Grain yield. (iv) (a) 1958—1960. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

1958

(i) 946 lb./ac. (ii) 232.8 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4
Av. yield	288	535	1020	1942

S.E./mean = 104.1 lb./ac.

1959

(i) 919 lb./ac. (ii) 243.6 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4
Av. yield	277	647	1201	1550

S.E./mean = 108.9 lb./ac.

Crop :- Maize *(Kharif).* **Ref :- Bh. 59(53).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'M'.**

Object :—To study the comparative effect of compost and G.L. on Maize with normal and less than normal C/N ratio on humus formation.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Maize. (c) N.A. (ii) (a) Red laterite. (b) Refer soil analysis, Kanke. (iii) 15.6.1959. (iv) (a) Digging with spade twice. (b) Line sowing. (c) 12 srs./ac. (d) 2′×1.5′. (e) N.A. (v) Nil. (vi) Kalimpong (late). (vii) Unirrigated. (viii) 1 hoeing, 1 weeding and earthing up. (ix) 34.9″. (x) 2.10.1959.

2. TREATMENTS .

1. Control.
2. 40 lb./ac. of P_2O_5 as Super+40 lb./ac. of N as A/S.
3. 40 lb./ac. of P_2O_5 as Super+40 lb./ac. of N as compost.
4. 40 lb./ac. of P_2O_5 as Super+40 lb./ac. of N as G.L.
5. Compost+kranj cakes to narrow down the C/N ratio to about half the original value.
6. G.L.+kranj cakes to narrow down the C/N ratio to about half the original value.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 14′×20′. (b) 12′×18′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) N.A. (iii) Grain and straw yield. (iv) (a) to (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 433 lb./ac. (ii) 167.0 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5	6
Av. yield	299	653	416	198	411	622

S.E./mean = 83.5 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 58(115).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'M'.**

Object :—To find out the effect of placement of lime on Maize.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Red laterite. (b) Refer soil analysis, Kanke. (iii) 29.7.1958. (iv) (a) 1 ploughing and 1 digging with spade. (b) Line sowing. (c) 12 srs./ac. (d) 2′×1.5′. (e) N.A. (v) Nil. (vi) Kalimpong. (vii) Unirrigated. (viii) Nil. (ix) 21.66″. (x) 11.10.1958.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 levels of manures : $M_0=0$ and $M_1=40$ lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super+40 lb./ac. of K_2O as Mur. Pot.

(2) 4 applications of lime : $L_0=0$, $L_1=$Full dose applied at surface, $L_2=$Full dose applied at 6″ depth and $L_3=$Half at surface+half at 6″ depth.

Lime at 3600 lb./ac. applied in 1958. Residual effect of lime studied in 1959 and 1960.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 8. (b) N.A. (iii) 5. (iv) (a) N.A. (b) 1/100 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1958—1960. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 987 lb./ac. (ii) 332.5 lb./ac. (iii) Main effect of L is significant and main effect of M is highly significant. (iv) Av. yield of grain in lb./ac.

	L_0	L_1	L_2	L_3	Mean
M_0	290	534	463	521	452
M_1	1023	1943	1298	1824	1522
Mean	656	1238	880	1172	987

S.E. of marginal mean of L = 105.1 lb./ac.
S.E. of marginal mean of M = 74.3 lb./ac.
S.E. of body of table = 148.7 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 59(55).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'M'.**

Object :—To find out the effect of placement of lime on Maize.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Maize. (c) As per treatments. (ii) (a) Red laterite. (b) Refer soil analysis, Kanke. (iii) 13.6.1959. (iv) (a) Digging with spade twice. (b) Line sowing. (c) 12 srs./ac. (d) 2′×1.5′. (e) N.A. (v) Nil. (v) Kalimpong. (vii) Unirrigated. (viii) Nil. (ix) and (x) N.A.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(115) on page 422.

5. RESULTS :

(i) 1052 lb./ac. (ii) 366.5 lb./ac. (iii) Main effect of L is significant and effect of M is highly significant. (iv) Av. yield of grain in lb./ac.

	L_0	L_1	L_2	L_3	Mean
M_0	277	647	793	713	608
M_1	1201	1547	1637	1604	1497
Mean	739	1097	1215	1158	1052

S.E. of marginal mean of L = 115.9 lb./ac.
S.E. of marginal mean of M = 82.0 lb./ac.
S.E. of body of table = 163.9 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 58(29).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'M'.**

Object :—To study the response of Maize to aerial spray of fertilizers at different growth stages.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Reddish sandy. (b) Refer soil analysis, Kanke. (iii) 6.7.1958. (iv) (a) 3 ploughings. (b) Dibbling. (c) N.A. (d) 1.5′×1′. (e) 3. (v) Nil. (vi) Kalimpong. (vii) Unirrigated. (viii) Hoeing and earthing up. (ix) 26.18″. (x) 12.10.1958.

2. TREATMENTS :

T_1=40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super at sowing+simple water spray (control).

T_2=30 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super at sowing+4.75% solution of A/S sprayed at 100 gallons/ac.

T_3=40 lb./ac. of N as A/S+30 lb./ac. of P_2O_5 as Super at sowing+2.16% solution of Super sprayed at 100 gallons/ac.

T_4=30 lb./ac. of N as Urea+40 lb./ac. of P_2O_5 as Super at sowing+5.5 % solution of Urea sprayed at 100 gallons/ac.

T_5=40 lb./ac. of N as A/S+30 lb./ac. of P_2O_5 as KH_2PO_4 at sowing+4.34% solution of KH_2PO_4 sprayed at 100 gallons/ac.

The treatments applied at three stages : S_1=Thinning, S_2=Tasseling, and S_3=Grain filling stage.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 5 (for each stage of spraying). (iv) (a) 14′×10½′. (b) 12′×9′. (v) 12″×9″. (vi) Yes.

4. GENERAL :

(i) Poor due to water logging. (ii) Nil. (iii) Study of individual plant characteristics, grain and straw yield (iv) (a) 1958—1959. (b) N.A. (c) Nil. (v) (a) and (b) Nil. (vi) Nil. (vii) Data for S_3 N.A.

5. RESULTS :

(i) to (iii) Refer below. (iv) Av. yield of grain in lb./ac.

	T_1	T_2	T_3	T_4	T_5	G.M.	S.E.	Sig.	S.E./mean
S_1	681	564	676	277	782	596	290	N.S.	130
S_2	524	635	625	756	746	657	159	N.S.	71

Crop :- Maize *(Kharif)*. **Ref :- Bh. 59(14).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'M'.**

Object :—To study the response of Maize to aerial spray of fertilizers at different growth stages.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Wheat. (c) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (ii) (a) Reddish Sandy. (b) Refer soil analysis, Kanke. (iii) 4.6.1959. (iv) (a) 3 ploughings. (b) Dibbling. (c) N.A. (d) 1.5′×1′. (e) 3. (v) Nil. (vi) Kalimpong. (vii) Unirrigated. (viii) Hoeing and earthing up once. (ix) 40″. (x) 25.9.1959.

2. TREATMENTS :

Main-plot treatments :

5 manurial treatments : T_1=40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super at sowing+simple water sprayed at 100 gallons/ac. (control), T_2=30 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super at sowing+4.75% solution of A/S sprayed at 100 gallons/ac., T_3=30 lb./ac. of N as Urea+40 lb./ac. of P_2O_5 as Super at sowing +2.16% solution of Urea sprayed at 100 gallons/ac., T_4=40 lb./ac. of N as A/S +30 lb./ac. of P_2O_5 as Super at sowing+5.5% solution of Super sprayed at 100 gallons/ac. and T_5=40 lb./ac. of N as A/S+30 lb./ac. of KH_2PO_4 as Super at sowing+4.34% solution of KH_2PO_4 sprayed at 100 lb./ac.

Sub-plot treatments :

3 stages of application : S_1=at thinning 7.7.1959, S_2=at tasseling 3.8.1959 and S_3=at grain filling stage 22.8.1959

3. DESIGN :

(i) Split-plot. (ii) (a) 5 main-plots/replication. (b) 3 sub-plots/main-plot. (iii) 4. (iv) (a) 16′×9′. (b) 14′×7′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Attack of stem-borer. (iii) Study of individual plant characteristics ; grain and srtaw yield. (iv) (a) 1958—1959. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 3008 lb./ac. (ii) (a) 790 lb./ac. (b) 1558 lb./ac. (iii) Effect of T is significant and effect of S is highly significant. (iv) Av. yield of grain in lb./ac.

	T_1	T_2	T_3	T_4	T_5	Mean
S_1	1939	663	1298	1456	2294	1930
S_2	4376	3563	2992	3433	167	3706
S_3	4635	2023	3790	3021	2464	3387
Mean	3650	3083	2693	2637	2975	3008

S.E. of difference of two

1. T marginal means = 322 lb./ac.
2. S marginal means = 493 lb./ac.
3. S means at the same level of T = 1102 lb./ac.
4. T means at the same level of S = 957 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 56(161).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'M'.**

Object :—To study the effect of lime in combination with fertilizers on Maize.

1. BASAL CONDITIONS:

(i) (a) Nil. (b) Gram. (c) N.A. (ii) (a) Red loam. (b) Refer soil analysis, Kanke. (iii) 22.6.1956. (iv) (a) 1 ploughing and 3 spadings. (b) Line sowing with Dutch hoe. (c) 12 srs./ac. (d) 9″×12″. (e) 1. (v) Nil. (vi) Kalimpong. (vii) Unirrigated. (viii) 2 earthings and 2 weedings. (ix) 29.54″. (x) 9.10.1956.

2. TREATMENTS:

All combinations of (1) and (2)

(1) 4 levels of of lime : $L_0=0$, $L_1=600$ lb./ac., $L_2=1200$ lb./ac. and $L_3=2400$ lb./ac.

(2) 2 levels of manures : $M_0=0$ and $M_1=40$ lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super+40 lb./ac. of K_2O as Mur. Pot.

3. DESIGN:

(i) 4×2 Fact. in R.B.D. (ii) (a) 8. (b) N.A. (iii) 6. (iv) (a) 14′×11′. (b) 12′×9′. (v) 1′×1′. (vi) Yes.

4. GENERAL:

(i) Good. (ii) Nil. (iii) Straw and grain yield. (iv) (a) 1956—1960. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS:

(i) 2600 lb./ac. (ii) 647.5 lb./ac. (iii) Main effects of L and M are highly significant. Interaction L×M is significant. (iv) Av. yield of grain in lb./ac.

	L_0	L_1	L_2	L_3	Mean
M_0	1615	2276	1960	2177	2007
M_1	2552	2705	3240	4273	3192
Mean	2084	2490	2600	3225	2600

S.E. of marginal mean of L = 186.9 lb./ac.
S.E. of marginal mean of M = 132.2 lb./ac.
S.E. of body of table = 264.3 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 57(133).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'M'.**

Object :—To study the effect of lime in combination with fertilizers on Maize.

1. BASAL CONDITIONS:

(i) (a) Maize—Wheat—Maize. (b) Wheat. (c) As per treatments. (ii) (a) Refer soil anlysis, Kanke. (iii) 6.7.1957. (iv) 1 ploughing followed by 1 spading. (b) Line sowing. (c) 12 srs./ac. (d) 9″×12″. (e) N.A. (v) Nil. (vi) Kalimpong (late). (vii) Unirrigated. (viii) 2 weedings and earthings. (ix) 29.0″. (x) 13.11.1957.

2. TREATMENTS to 4. GENERAL:

Same as in expt. no. 56(161) on page 424.

5. RESULTS:

(i) 1475 lb./ac. (ii) 278.1 lb./ac. (iii) Main effects of L and M are highly significant. Interaction is no significant. (iv) Av. yield of grain in lb./ac.

	L_0	L_1	L_2	L_3	Mean
M_0	732	1217	1638	1399	1246
M_1	1297	1774	1902	1837	1703
Mean	1014	1496	1770	1618	475

S.E. of marginal mean of L = 80.3 lb./ac.
S.E .of marginal mean of M = 56.8 lb./ac.
S.E. of boby of table = 113.5 lb./ac.

Crop :- Maize ***(Kharif).*** **Ref :- Bh. 58(131).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'M'.**

Object :—To study the effect of lime in combination with fertilizers on Maize.

1. BASAL CONDITIONS :

(i) (a) Maize—Wheat—Maize. (b) Wheat. (c) As per treatments. (ii) (a) Red laterite. (b) Refer soil analysis, Kanke. (iii) 24.6.1958. (iv) (a) 1 ploughing followed by 1 spading. (b) Line sowing. (c) 12 srs./ac. (d) 9″×12″. (e) N.A. (v) Nil. (vi) Kalimpong (late). (vii) Unirrigated. (viii) 2 weedings and 2 earthings. (ix) and (x) N.A.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 56(161) on page 424.

5. RESULTS :

(i) 1783 lb./ac. (ii) 585.8 lb./ac. (iii) Main effects of L and M are highly significant. (iv) Av. yield of grain in lb./ac.

	L_0	L_1	L_2	L_3	Mean
M_0	872	1671	1285	1285	1278
M_1	1722	2700	2078	2648	2287
Mean	1297	218	1681	1966	1783

S.E. of marginal mean of L = 169.1 lb /ac.
S.E. of marginal mean of M = 119.6 lb./ac.
S.E. of body of table = 239.2 lb./ac.

Crop :- Maize. **Ref :- Bh. 59(73).**

Site -- Agri. Res. Instt., Kanke. **Type :- 'M'.**

Object :—To study the effect of lime in combination with fertilizers on Maize.

1. BASAL CONDITIONS :

(a) (i) Maize—Wheat—Maize. (b) Wheat. (c) As per treatment. (i) (a) Red Laterite. (b) Refer soil analysis, Kanke. (iii) 9.6.1959. (iv) (a) 1 ploughing followed by 1 spading. (b) Line sowing. (c) 12 srs./ac. (d) 9″×12″. (e) N.A. (v) Nil. (vi) Kalimpong (late). (vii) Unirrigated. (viii) 2 weedings and 2 earthings. (ix) 32.00″. (x) 20.9.1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 56(161) on page 424·

5. RESULTS :

(i) 569 lb./ac. (ii) 272.4 lb./ac. (iii) Effect of L is significant and effect of M is highly significant. (iv) Av. yield of grain in lb./ac.

	L_0	L_1	L_2	L_3	Mean
M_0	180	360	446	326	328
M_1	582	746	935	978	810
Mean	381	553	690	652	569

S.E. of marginal mean of L = 78.6 lb./ac.
S.E. of marginal mean of M = 55.6 lb./ac.
S.E. of body of table = 111.2 lb./ac.

Ctop :- Maize *(Kharif.)* **Ref :- Bh. 56(163).**

Site :- Agri. Res. Instt., Kanke. Type :- 'M'.

Object :- To study the effect of organic and inorganic manures in building the soil fertility for Maize crop.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Red laterite. (b) Refer soil analysis, Kanke. (iii) N.A. (iv) (a) 1 ploughing followed by 1 weeding. (b) Line sowing. (c) 12 srs./ac. (d) 18″×12″. (e) N.A. (v) Nil. (vi) Kalimpong (late). (vii) Unirrigated. (viii) 2 weedings and 2 earthings. (ix) and (x) N.A.

2. TREATMENTS :

Same as in expt. no. 56(164) on page 227.

3. DESIGN :

(i) R.B.D. (ii) (a) 13. (b) N.A. (iii) 4. (iv) (a) 14′×11′. (b) 12′×9′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) (ii) Nil. (iii) Cob and grain yield. (iv) (a) 1956—contd. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS ;

(i) 2604 lb./ac. (ii) 807.2 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8	M_9	M_{10}	M_{11}	M_{12}
Av. yield	1504	3039	2597	2679	2679	2834	2691	2812	2574	2374	2794	3095	2174

S.E./mean = 403.6 lb./ac.

Crop :- Maize *(Kharif).* **Ref :- Bh. 57(135).**

Site :- Agri. Res. Instt., Kanke. Type :- 'M'.

Object :—To study the effect of organic and inorganic manures in building the soil fertility for Maize crop.

1. BASAL CONDITIONS :

(i) (a) Maize—Wheat—Maize. (b) Wheat. (c) As per treatments. (ii) Red laterite. (b) Refer soil analysis, Kanke. (iii) N.A. (iv) (a) 1 ploughing followed by 1 spading. (b) Line sowing. (c) 12 srs./ac. (d) 18″×12″. (e) N.A. (v) Nil. (vi) Kalimpong (late). (vii) Unirrigated. (viii) 2 weedings and 2 earthings. (ix) and (x) N.A.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 56(163) above.

5. RESULTS :

(i) 975 lb./ac. (ii) 543.4 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8	M_9	M_{10}	M_{11}	M_{12}
Av. yield	469	1232	1138	912	797	1182	778	1074	880	726	791	1735	958

S.E./mean = 271.7 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 58(133).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'M'.**

Object :—To study the effect of organic and inorganic manures in building the soil fertility for Maize crop.

1. BASAL CONDITIONS :

Same as in expt. no. 57(135) on page 427.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no 56(163) on page 427.

5. RESULTS :

(i) 1688 lb./ac. (ii) 449.0 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8	M_9	M_{10}	M_{11}	M_{12}
Av. yield	543	1226	2032	1818	1753	2049	1876	1687	1868	1325	1802	2123	1843

S.E./mean = 224.5 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 59(75).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'M'.**

Object :—To study the effect of organic and inorganic manures in building of soil fertility for Maize crop.

1. BASAL CONDITIONS :

Same as in expt. no. 57(135) on page 427.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 56(163) on page 427.

5. RESULTS :

(i) 821 lb./ac. (ii) 296.2 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8	M_9	M_{10}	M_{11}	M_{12}
Av. yield	610	1080	887	939	797	822	964	527	566	887	720	1015	862

S.E./mean = 148.1 lb./ac.

Crop :- Maize. **Ref :- Bh. 55(80).**

Site :- Bot. Sub-Stn., Monghyr. **Type :- 'M'.**

Object :—To test the effect of deep placement of fertilizers on Maize.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Rahar*. (c) F.Y.M. at 5 mds 35 srs./ac. B.M. at 1 md./ac. and A/S at 26 srs./ac. (ii) (a) Loamy. (b) N.A. (iii) 26.6.1955. (iv) (a) 1 ploughing with Bihar Junior and 1 with *desi* plough at an interval of 4 days. (b) N.A. (c) 6 srs./ac. (d) and (e) N.A. (v) Nil. (vi) Jaunpur (late). (v) Unirrigated. (viii) Weeding, hoeing and ridging once each. (ix) 36.64″. (x) 23.9.1955.

2. TREATMENTS :

1. Control.
2. 40 lb./ac. of N as A/S applied at surface.
3. 40 lb./ac. of N as A/S applied at depth.
4. 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super at surface.
5. 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super at depth.
6. 40 lb./ac. of N as A/S at surface+40 lb./ac. of P_2O_5 as Super at depth.

3. DESIGN :

(i) R.B.D. (ii) 6. (iii) 5. (iv) (a) and (b) 33′×33′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good ; no lodging. (ii) Nil. (iii) Dates of germination, flowering and cob formation. Yield of grain and straw. (iv) (a) to (c) No. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS:

(i) 1275 lb./ac. (ii) 419.7 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5	6
Av. yield	918	1243	1294	1301	1337	1557

S,E./mean = 187.7 lb./ac.

—

Crop :- Maize. **Ref :- Bh. 55(79).**

Site :- Bot. Sub-Stn., Monghyr. **Type :- 'M'.**

Object :—To test the effect of potash on Maize.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Rahar*. (c) F.Y.M. at 5 md. 35 srs./ac.B.M. at 1 md./ac. and A/S at 26 srs./ac. (ii) (a) Loamy soil. (b) N.A. (iii) 26, 27.6.1955. (iv) (a) 1 ploughing with Bihar junior and 1 with *desi* plough. (b) Sowing behind the plough. (c) 7 srs./ac. (d) Row to row 1′. (e) —. (v) Nil. (vi) Jaunpur (late). (vii) Unirrigated. (viii) Weeding, hoeing and ridging once each. (ix) 36.64″. (x) 21.9.1955.

2. TREATMENTS :

1. Control.
2. 40 lb./ac. of N as A/S.
3. 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super.
4. 40 lb./ac. of N as A/S+40 lb./ac. of K_2O as Mur. Pot.
5. 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super+40 lb./ac. of K_2O as Mur. Pot.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) and (b) 33′×33′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Poor, lodging in early stage. (ii) Nil. (iii) Dates of germination, flowering and cob formation, yield of grain and straw. (iv) (a) to (c) No. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 450 lb./ac. (ii) 186 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3		5
Av. yield	183	473	572	535	486

S.E./mean = 93.0 lb./ac.

Crop :- Maize. **Ref :- Bh. 55(85).**

Site :- Bot. Sub-Stn., Monghyr. **Type :- 'M'.**

Object :—To test if Rock phos. and B.M. can replace Super for Maize.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Rahar.* (c) F.Y.M. at 5 md.-35 srs./ac.+B.M. at 1 md./ac.+A/S at 26 srs./ac. (ii) (a) Loamy. (b) N.A. (iii) 28.6.1955. (iv) (a) 1 ploughing by Bihar junior and 1 by *desi* plough at an interval of 3 days. (b) Sown behind the plough. (c) 6 srs./ac. (d) Row to row 1′. (e) —. (v) Nil. (vi) Jaunpur (late). (vii) Unirrigated. (viii) Weeding, hoeing and ridging once each. (ix) 36.64″. (x) 22.9.1955.

2. TREATMENTS :

1. Control.
2. 40 lb./ac. of N as A/S.
3. 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Rock Phos.
4. 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super.
5. 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as B.M.

A/S and Super were given at the time of sowing on surface, while Bonemeal and Rock Phos. were applied one month after sowing on the surface.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) and (b) 33′×33′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Poor, lodging, in early stage. (ii) Nil. (iii) Dates of germination, flowering, cobs formation, yield of grain and straw. (iv) (a) to (c) No. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 199.3 lb./ac. (ii) 156.4 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5
Av. yield	53	247	242	267	188

S.E./mean = 78.2 lb./ac.

Crop :- Maize. **Ref :- Bh. 54(32).**

Site :- Bot. Sub-Stn., Monghyr. **Type :- 'M'.**

Object :—To study the effect of time of application of manures on Maize.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Rahar.* (c) Nil. (ii) (a) Loam. (b) N.A. (iii) 7, 8.7.1954. (iv) (a) 3 *desi* ploughings. (b) Dibbling. (c) N.A. (d) 1′×2′. (e) 2. (v) Nil. (vi) Jaunpur (late). (vii) Unirrigated. (viii) 2 weedings, 1 interculture and ridging, thinning to 1 plant/hole. (ix) 27.10″. (x) 27 to 30.9.1954.

2. TREATMENTS :

Main-plot treatments :

2 times of application : T_1=Full dose at sowing and T_2=Half at sowing+half before earthing near root zones.

Sub-plot treatments :

6 levels of manures : M_0=Control, M_1=20 lb./ac. of N, M_2=40 lb./ac. of N, M_3=20 lb./ac. of N+20 lb./ac. of P_2O_5, M_4=40 lb./ac. of N+20 lb./ac. of P_2O_5 and M_5=40 lb./ac. of N+40 lb./ac. P_2O_5.

N applied as A/S and P_2O_5 as Super.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block ; 6 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) 20′×20′. (b) 18′×16′. (v) One row alround the Plot. (vi) Yes.

4. GENERAL :

(i) Average. No lodging. (ii) Nil. (iii) Germination, date of silking and yield of grain. (iv) (a) 1953—contd. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 240.9 lb./ac. (ii) (a) 94.6 lb./ac. (b) 73.1 lb./ac. (iii) Main effect of T alone is highly significant. (iv) Av. yield of grain in lb./ac.

	M_0	M_1	M_2	M_3	M_4	M_5	Mean
T_1	35.6	207.4	298.2	243.1	301.4	343.5	238.2
T_2	51.8	259.3	314.4	223.6	307.9	304.6	243.6
Mean	43.7	233.3	306.3	233.3	304.6	324.1	240.9

S.E. of difference of two

1. T marginal means = 22.3 lb./ac.
2. M marginal means = 29.8 lb./ac.
3. M means at the same level of T = 42.2 lb./ac.
4. T means at the same level of M = 44.5 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 57(14).**

Site :- Govt. Agri. Farm, Musheri. **Type :- 'M'.**

Object :—To test the effect of town compost on soil fertility and Maize yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Gram. (c) G.M. applied. (ii) (a) Sandy loam. (b) N.A. (iii) 22.6.1957. (iv) (a) 3 ploughings. (b) Behind the plough. (c) 8 srs./ac. (d) 2.5″×9″. (e) N.A. (v) Nil. (vi) Jaunpur (late). (vii) Unirrigated. (viii) Earthing up. (ix) 23.5″. (x) 4.10.1957.

2. TREATMENTS :

1. Control.
2. 10 lb./ac. of N as compost+30 lb./ac. of N as A/S.
3. 20 lb./ac. of N as compost+20 lb./ac. of N as A/S.
4. 30 lb./ac. of N as compost+10 lb./ac. of N as A/S.
5. 40 lb./ac. of N as compost.
6. 40 lb./ac. of N as A/S.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) 252′×145′. (iii) 5. (iv) (a) 42′×29′. (b) 40′×27′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1956—1958. (b) and (c) No. (v) (a) Kanke, Patna, and Sabour. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1086 lb./ac. (ii) 302.5 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5	6
Av. yield	1086	1103	1020	1313	1111	880

S.E./mean = 135.3 lb./ac.

Crop :- Maize *(Kharif.)* **Ref :- Bh. 58(5).**

Site :- Govt. Agri. Farm, Musheri. **Type :- 'M'.**

Object :—To test the effect of farm compost on soil fertility and Maize yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Potato. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 27.6.1958. (iv) (a) 3 ploughings. (b) Behind the plough. (c) 8 srs/ac. (d) 2.5′×9″. (e) 1. (v) Nil. (vi) Jaunpur (late). (vii) Unirrigated. (viii) Hoeing and weeding once. (ix) 35.21″. (x) 1.10.1958.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 57(14) on page 431.

5. RESULTS :

(i) 802 lb./ac. (ii) 277.2 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5	6
Av. yield	987	864	708	823	815	617

S.E./mean = 124.0 lb./ac.

Crop :- Maize *(Kharif.)* **Ref :- Bh. 57(11).**

Site :- Govt. Agri. Farm, Musheri. **Type :- 'M'.**

Object :—To test the effect of potash on Maize.

1. BASAL CONDITIONS :

(i) Nil. (b) Gram. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 13.6.1957. (iv) (a) 3 ploughings. (b) Behind the plough. (c) 8 srs./ac. (d) 2.5′×9″. (e) —. (v) Nil. (vi) Jaunpur (late). (vii) Unirrigated. (viii) Earthing up. (ix) 21.7″. (x) 27.9.1957.

2. TREATMENTS :

Same as in expt. no. 55(79) on page 429.

3. DESIGN :

(i) (a) R.B.D. (ii) (a) 5. (b) 168′×146′. (iii) 4. (iv) (a) 42′×29′. (b) 40′×27′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) 1956—1958. (b) Yes. (c) No. (v) (a) Jalalgarh. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1259 lb./ac. (ii) 261.3 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5
Av. yield	1255	1193	1193	1327	1327

S.E./mean = 130.7 lb./ac.

Crop :- Maize *(Kharif.)* **Ref .- Bh. 58(6).**

Site :- Govt. Agri. Farm, Musheri. **Type :- 'M'**

Object :—To test the effect of potash on Maize.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 27.6.1958. (iv) (a) 3 ploughings. (b) Behind the plough. (c) 8 srs./ac. (d) 2.5′×9″. (e) 1. (v) Nil. (vi) Jaunpur (late). (vii) Unirrigated. (viii) Hoeing and weeding once. (ix) 34.0″. (x) 29.9.1958.

2. TREATMENTS :

Same as in expt. no. 55(79) on page 429.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 57(11) on page 432.

5. RESULTS :

(i) 928 lb./ac. (ii) 304.4 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5
Av. yield	1244	740	823	905	926

S.E./mean = 152.2 lb./ac.

Crop :- Maize *(Kharif.)* **Ref :- Bh. 59(21).**

Site :- Govt. Agri. Farm, Musheri. **Type :- 'M'.**

Object :—To test the effect of potash on Maize crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Wheat. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 30.6.1959. (iv) (a) 3 ploughings by *desi* plough. (b) Behind the plough. (c) 8 srs./ac. (d) 2.5′×1′. (e) 2 to 3. (v) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super half at sowing and half at earthing. (vi) Jaunpur. (vii) Unirrigated. (viii) 1 weeding and earthing. (ix) 19.25″. (x) 7.10.1959.

2. TREATMENTS :

Same as in expt. no. 55(79) on page 429.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) 168′×147′. (iii) 4. (iv) (a) and (b) 40′×27′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) Nil. (iii) Cob and grain yield. (iv) (a) to (c) No. (v) (a) and (b) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 562 lb./ac. (ii) 180.8 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5
Av. yield	446	633	552	529	653

S.E./mean = 90.4 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 57(18).**

Site :- Govt. Agri. Farm, Musheri. **Type :- 'M'.**

Object :—To study the effect of application of N and P on Maize crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Wheat. (c) N.A. (ii) Sandy loam. (b) N.A. (iii) 22.6.1957. (iv) (a) 3 ploughings. (b) Behind the plough. (c) 8 srs./ac. (d) 2.5′×9″. (e) —. (v) Nil. (vi) Jaunpur (late). (vii) No. (viii) Furrowing and earthing. (ix) 18.0″. (x) 27.9.1957.

2. TREATMENTS :

1. Control.
2. 40 lb./ac. of N.
3. 40 lb./ac. of N+40 lb/ac. P_2O_5 at surface.
4. 40 lb./ac. of N+40 lb./ac. P_2O_5 at plough depth.

3. DESIGN :

(i) R.B.D. (ii) (a) 4 (b) 168′×145′. (iii) 5. (iv) (a) N.A. (b) 40′×27′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) No. (iii) Grain yield. (iv) 1956—1958. (v) (a) Sabour, Kanke and Dumka. (b) Nil. (vi) and (vii) Nil.

5 RESULTS :

(i) 1351 lb./ac. (ii) 16.5 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb/ac.

Treatment	1	2	3	4
Av. yield	1020	1349	1637	1399

S.E./mean = 7.3 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 58(8).**

Site :- Govt. Agri. Farm, Musheri. **Type :- 'M'.**

Object :—To study the effect of application of N and P on Maize crop.

1. BASAL CONDITIONS:

(i) (a) Nil. (b) Wheat. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 27.6.1958. (iv) (a) 3 ploughings. (b) Behind the plough. (c) 8 srs/ac. (d) 2.5′×9″. (e) 1. (v) Nil. (vi) Jaunpur (late). (vii) Unirrigated. (viii) Hoeing and weeding once. (ix) 34.00″. (x) 30.9.1958.

2. TREATMENTS :

1. Control (no manure).
2. 40 lb./ac. of N as A/S.
3. 40 lb./ac. of N+40 lb./ac. of P_2O_5 as Super at surface.
4. 40 lb./ac. of N+40 lb./ac. of P_2O_5 as Super at plough depth.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) N.A. (b) 40′×27′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) 1956—1958. (b) Yes. (c) Nil. (v) (a) Sabour and Kanke. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 894.4 lb./ac. (ii) 242.5 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb /ac.

Treatment	1	2	3	4
Av. yield	889	954	879	856.

S.E./mean = 108.4 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 59(22).**

Site :- Govt. Agri. Farm, Musheri. **Type :- 'M'.**

Object :—To study the effect of application of N and P on Maize.

1. BASAL CONDITIONS.

(i) (a) Nil. (b) Wheat. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 13.6.1959. (iv) (a) 3 ploughings. (b) Behind the plough. (c) 8 srs/ac. (d) 2.5′×1′. (e) 2 to 3. (v) 20 lb./ac. of A/S+20 lb./ac. of Super at the time of sowing. (vi) Jaunpur. (vii) Unirrigated. (viii) 1 hoeing and 1 weeding. (ix) 20.56″. (x) 6, 7.10.1959.

2. TREATMENTS

1. Control.
2. 40 lb./ac. of P_2O_5 as Super.
3. 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super on the Surface.
4. 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super at plough depth.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) 168′×150′. (iii) 5. (iv) (a) and (b) 40′×27′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Cob and grain yield. (iv) (a) to (c) No. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1190 lb./ac. (ii) 386 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4
Av. yield	1128	1045	1244	1343

S.E./mean = 173 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 59(23)**

Site :- Govt. Agri. Farm, Musheri. **Type :- 'M'.**

Object :—To study the effect of manures on Maize yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Wheat. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 30.6.1959. (iv) (a) 3 ploughings by Bihar plough. (b) Behind the plough. (c) 8 srs/ac. (d) 2.5′×1′. (e) 2 to 3. (v) 40 lb./ac. of A/S+40 lb./ac. of Super half at sowing and half at the time of earthing. (vi) Jaunpur. (vii) No. (viii) 1 weeding and 1 earthing. (ix) 19.25″. (x) 7, 8-10-1959.

2 TREATMENTS :

1. Control.
2. 80 lb./ac. of N as A/S.
3. 80 lb./ac. of N as A/S+80 lb./ac. of P_2O_5 as Super.
4. 80 lb./ac. of N as A/S+40 lb./ac. of K_2O as Mur. Pot.
5. 80 lb./ac. of N as A/S+80 lb./ac. of P_2O_5 as Super+40 lb./ac. K_2O as Mur. Pot.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) 168′×147′. (iii) 4. (iv) (a) and (b) 40′×27′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Not good. (ii) Nil. (iii) Cob and grain yield. (iv) (a) to (c) No. (v) (a) and (b) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 419 lb./ac. (ii) 97.8 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5
Av. yield	290	363	436	467	539

S.E./mean = 48.9 lb./ac.

Crop :- Maize **Ref :- Bh. 55(104).**

Site :- Govt. Agri. Farm, Musheri. **Type :- 'M'.**

Object :—To test the effect of deep placement of fertilizers.

1. BASAL CONDITIONS :

(i) (a) Maize—Potato—Maize—Wheat. (b) Potato. (c) N.A. (ii) (a) Sandy Loam. (b) N.A. (iii) 15.6.1955. (iv) (a) 3 tractor ploughings, 3 Bihar ploughings and then *desi* ploughing and cultivator. (b) Line sowing (c) 6 srs/ac. (d) 2½′×9″. (e) 1 to 2. (v) Nil. (vi) Jaunpur. (vii) Unirrigated. (viii) 1 earthing, 1 hoeing and thinning to one seedling/hole. (ix) 49.42″. (x) 21.9.1955.

2. TREATMENTS :

1. Control.
2. 40 lb./ac. of N as A/S at the surface.
3. 40 lb./ac. of N as A/S at depth.
3. 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super.
4. 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super at the surface.
5. 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super at depth.
6. 40 lb./ac. of N as A/S at surface+40 lb./ac. of P_2O_5 at depth.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 5. (iv) (a) 72′×15′. (b) 70½×13½′. (v) 9″×9″. (vi) Yes.

4. GENERAL :

(i) Fair, no lodging. (ii) Nil. (iii) Height, date of germination flowering and yield of grain. (iv) (a) to (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 2024 lb./ac. (ii) 446.3 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5	6
Av. yield	2184	1798	1808	2231	2118	2005

S.E./meam = 199.6 lb./ac.

Crop :- Maize. **Ref :- Bh. 55(22).**

Site :- Govt. Agri. Farm, Neterhat. **Type :- 'M'.**

Object :—To test the effect of potash on Maize .

1. BASAL CONDITIONS :

(i) (a) Niger—Fallow—Maize. (b) Fallow. (c) 5 mds./ac. of castor cake to Niger. (ii) (a) Laterite. (b) N.A. (iii) 14.6.1955. (iv) (a) 2 ploughings by *desi* plough. (b) Sown behind the plough. (c) 10 srs/ac. (d) Row to row 2½′. (e) —. (v) Nil. (vi) Kalimpong (late). (vii) Unirrigated. (viii) Earthing and hoeing. (ix)49.10″. (x) 17.11.1955.

2. TREATMENTS :

Same as in expt. no. 55(79) on page 429.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 44′×31′. (b) 40′×27′. (v) 2′×2′. (vi) Yes.

4. GENERAL :

(i) Very poor ; no lodging. (ii) Slight top borer incidence. (iii) Yield of grain and straw, height at maturity. (iv) (a) to (c) No. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 22.3 lb./ac. (ii) 34.2 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5
Av. yield	16.8	19.4	32.4	16.8	25.9

S.E./mean = 17.1 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 56(151).**

Site :- Govt. Agri. Farm, Neterhat. **Type :- 'M'.**

Object :—To test the effect of liming the acid soils.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Maize. (c) N.A. (ii) (a) Red laterite. (b) N.A. (iii) 27.6.1956. (iv) 4 ploughings by *desi* plough. (b) Behind the plough. (c) 15 srs./ac. (d) 2′×1′. (e) 1. (v) Nil. (vi) Kalimpong. (vii) Unirrigated. (viii) 1 weeding. (ix) 40.79″. (x) 13.10.1956.

2. TREATMENTS :

1. Control (no manure).
2. 800 lb./ac. of lime.
3. 1600 lb./ac. of lime.
4. 2400 lb./ac. of lime.
5. 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super+40 lb./ac. of K_2O as Mur. Pot.
6. 2400 lb./ac. of lime+40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super+40 lb./ac. of K_2O as Mur. Pot.

Lime applied a month before sowing, other fertilizers applied at sowing.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) 256′×31′. (iii) 5. (iv) (a) 31′×44.4′. (b) 27′×40.4′. (v) 2′×2′. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) Nil. (iii) Cob and grain yield. (iv) (a) 1956—1958. (b) Yes. (c) Nil. (v) and (vi) Nil. (vii) Damage by animals.

5. RESULTS :

(i) 204 lb./ac. (ii) 131.6 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5	6
Av. yield	68	158	183	242	246	326

S.E./mean = 58.8 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 59(45).**

Site :- Govt. Agri. Farm, Piprakothi. **Type :- 'M'.**

Object :—To test the effect of trace elements on crop yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Rahar*. (c) 100 srs./ac. of Super. (ii) (a) Sandy loam. (b) N.A. (iii) 2.7.1959. (iv) (a) 2 ploughings by Bihar plough, once by cultivator, each ploughing followed by planting. (b) Behind the plough. (c) 8 srs /ac. (d) 2′×1′. (e) 2. (v) Nil. (vi) Jaunpur. (vii) Unirrigated. (viii) 2 weedings 1 interculturing and 1 earthing. (ix) 19.77″. (x) 30.9.1959.

2. TREATMENTS :

14 trace elements : T_1=Control. T_2=40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super+40 lb./ac. of K_2O as Mur. Pot. $T_3=T_2$+10 lb./ac. of Manganese Sulphide. $T_4=T_2$+20 lb./ac. of Manganese Sulphide. $T_5=T_2$+10 lb./ac. of Zinc Sulphide. $T_6=T_2$+20 lb./ac. of Zinc Sulphide. $T_7=T_2$+10 lb./ac. of Borate. $T_8=T_2$+20 lb./ac of Borate. $T_9=T_2$+10 lb./ac. of copper sulphide. $T_{10}=T_6$+20 lb./ac. of Copper Sulphide. $T_{11}=T_2$+10 lb./ac. of Ferrous Sulphide. $T_{12}=T_2$+20 lb./ac. of Ferrous Sulphide. $T_{13}=T_2$+1 lb./ac. of Molybdenum. $T_{14}=T_2$+2 lb./ac. of Molybdenum.

DESIGN :

(i) R.B.D. (ii) (a) 4. (b) 488′×165′. (iii) 4. (iv) (a) 18.5′×35′. (b) 16.5′×33′. (v) 1′×1′. (vi) Ye

4. GENERAL :

(i) Good. (ii) Nil. (iii) Number of plants/plot and grain yield. (iv) (a) 1959—N.A. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1479 lb./ac. (ii) 600.3 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_1	T_2	T_3	T_4	T_5	T_6	T_7
Av. yield	1571	1913	1147	1013	1502	1579	1656

Treatment	T_8	T_9	T_{10}	T_{11}	T_{12}	T_{13}	T_{14}
Av. yield	1854	1599	1502	1183	1523	1399	1263

S.E./mean 300.2 lb./ac.

Crop :- Maize ***(Kharif).*** **Ref :- Bh. 59(40).**

Site :- Govt. Agri. Farm, Piprakothi. **Type - 'M'.**

Object :—To test the effects of different kinds of phosphates on yield of Maize.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Oats. (c) 5 md./ac. of castor cake and 30 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy loam. (b) N.A. (iii) 2.7.1959. (iv) (a) 2 ploughings by Bihar plough and 2 by cultivator, each followed by planking. (b) Behind the plough. (c) 8 srs./ac. (d) 2'×1'. (e) —. (v) Nil. (vi) Jaunpur. (vii) Unirrigated. (viii) Weeding twice by *khurpi*, 1 interculturing by cultivator and earthing up by ridger. (ix) 19.77". (x) 1.10.1959.

2. TREATMENTS :

T_1=Control.
T_2=40 lb./ac. of N as A/S.
T_3=40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super.
T_4=40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as B.M.
T_5=40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Rock Phos.
T_6=40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Di-cal. Phos.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 5. (iv) (a) $43\frac{1}{3}'\times30'$. (b) $40\frac{1}{3}'\times27'$. (v) $1\frac{1}{2}'\times1\frac{1}{2}'$. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Tiller count, height measurments, no. of cobs and grain yield. (iv) and. (v) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 855 lb./ac. (ii) 379.4 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	790	739	775	921	1026	880

S.E./mean = 169.7 lb./ac.

Grop :- Maize ***(Kharif.)*** **Ref :- Bh. 54(129).**

Site :- Agri. Res. Instt., Pusa. **Type :- 'M'.**

Object :—To study the effect of N and P on Maize crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Sugarcane. (c) 60 lb./ac. of N as A/S+75 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy loam. (b) N.A. (iii) 17.6.1954. (iv) (a) 2 ploughings. (b) Behind the plough. (c) 8 srs./ac. (d) 2′×1′. (e) 1. (v) Nil. (vi) Kalimpong. (vii) Unirrigated. (viii) Nil. (ix) 42.44″. (x) 26.9.1954.

2. TREATMENTS :

M_0=No manures
M_1=20 lb./ac. of N as A/S.
M_2=40 lb./ac. of N as A/S.
M_3=20 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super.
M_4=40 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super.
M_5=40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) 20′×20′. (b) 18′×16′. (v) 1′×2′. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Attack of white ants and stem-borer—Aldrin sprayed. (iii) Grain yield. (iv) (a) to (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 1091 lb./ac. (ii) 344.4 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	681	1047	1290	1070	1138	1319

S.E./mean = 140.6 lb./ac.

Crop :- Maize *(Kharif.)* **Ref :- Bh. 54(57).**
Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To test the effect of $MnSO_4$ on Maize yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Potato. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 24.3.1954. (iv) (a) Spading twice at an interval of 10 days. (b) Sown in lines. (c) 2 ozs./plot. (d) 1½′×1′. (e) N.A. (v) Nil. (vi) Kharagpuri (early). (vii) Irrigated. (viii) 2 weedings, interculturing and thinning. (ix) 16.56″. (x) 19.6.1954.

2. TREATMENTS :

1. No manure.
2. 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super+40 lb./ac. of K_2O as Mur. Pot.
3. Treatment 2+$MnSO_4$ at 1 oz./plot.
4. Treatment 2+$MnSO_4$ at 2 oz./plot.
5. Treatment 2+$MnSO_4$ at 3 oz./plot.

Manures applied by broadcasting at the time of sowing.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 3. (iv) (a) and (b) 12′×9′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Fair, no lodging. (ii) Nil. (iii) Grain and stalk yield. (iv) (a) to (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 1590 lb./ac. (ii) 309.0 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5
Av. yield	756	1857	1907	1723	1706

S.E./mean = 178.4 lb./ac.

Crop :- Maize. **Ref :- Bh. 54(55).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To test if by H_2SO_4 treatment, Rock Phos. and B.M. could be as effective as Super.

1. BASAL CONDITIONS :

(i) (a) Maize—Wheat—Maize. (b) Wheat. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 16.6.1954. (iv) (a) Spading twice at an interval of 15 days. (b) Sown in line. (c) 2 oz./plot. (d) 1½′×1′. (e) N.A. (v) No. (vi) Jaunpur (late). (vii) Unirrigated. (viii) 2 weedings, 3 intercultures and thinning. (ix) 40.46″. (x) 17.9.1954.

2. TREATMENTS :

10 manurial treatments : M_0=Control, M_1=40 lb./ac. of N as A/S, $M_2=M_1+40$ lb./ac. of P_2O_5 as Super, $M_3=M_1+40$ lb./ac. of P_2O_5 as Rock Phos , $M_4=M_2+2$ lb./plot of H_2SO_4, $M_5=M_3+2$ lb./plot of H_2SO_4, M_6=40 lb./ac. of N as compost, $M_7=M_6+40$ lb./ac. of P_2O_5 as Super, $M_8=M_6+40$ lb./ac. of P_2O_5 as Rock Phos. and $M_9=M_6+40$ lb./ac. of P_2O_5 as B.M.

Compost applied by broadcasting one month before sowing, A/S and Super at the time of sowing, Rock Phos. and B.M. 15 days before sowing. H_2SO_4 diluted with 7 times water and sprayed a week before sowing.

3. DESIGN :

(i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 6. (iv) (a) and (b) 12′×9′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Fair ; no lodging. (ii) Nil. (iii) Grain and cob yield. (iv) (a) 1951—1955. (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 672 lb./ac. (ii) 283.8 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8	M_9
Av. yield	356	712	818	804	683	638	702	658	604	746

S.E./mean = 115.9 lb./ac.

Crop :- Maize. **Ref :- Bh. 54(54).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To compare the efficacy of liquid ammonia with A/S.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Wheat. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 15.6.1954. (iv) (a) Spading twice at an interval of 10 days. (b) Sown in line. (c) 1 oz./plot. (d) 1½′×1′. (e) —. (v) Nil. (vi) Jaunpur (late). (vii) Irrigated. (viii) 2 weedings, intercultures and thinning. (ix) 40.46″. (x) 16.9.1954.

2. TREATMENTS :

1. Control (no manuring).
2. 20 lb./ac. of N as A/S.
3. 40 lb./ac. of N as A/S.
4. 20 lb./ac. of N as Liquid Ammonia.
5. 40 lb./ac. of N as Liquid Ammonia.

A/S by broadcast at the time of sowing. Liquid Ammonia diluted with water applied in lines 5 days before sowing and covered with soil.

3. DESIGN :

(i) C.R.D. (ii) (a) 20 (no block formation). (b) Nil. (iii) 4 for each treatment. (iv) (a) and (b) 12′×9′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Fair ; no lodging. (ii) No. (iii) Av. height, size and weight of cobs and grain yield. (iv) (a) to (c) No. (v) to (vii) Nil.

5. RESULTS

(i) 500.9 lb./ac. (ii) 230.6 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5
Av. yield	445	397	697	477	489

S.E./mean = 115.3 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 58(220).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To compare different sources of P_2O_5 for better yield of Maize.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 10.6.1958. (iv) (a) 3 times spading before sowing. (b) Line sowing. (c) 8 srs./ac. (d) Row to row 1′. (e) —. (v) Nil. (vi) Jaunpur (medium). (vii) Irrigated. (viii) 1 weeding, earthing and hand hoeing. (ix) 20.25″. (x) 28.8.1958.

2. TREATMENTS :

6 sources of P_2O_5 at 40 lb./ac. : S_0=Control (no P_2O_5), S_1=Super, S_2=Rock Phos., S_3=Di-cal. Phos., S_4=Hyper Phos. and S_5=B.M.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 14′×11′. (b) 12′×9′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) to (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 2431 lb /ac. (ii) 426.2 lb /ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	S_0	S_1	S_2	S_3	S_4	S_5
Av. yield	2268	2865	2476	2255	2282	2437

S.E./mean = 213.1 lb./ac.

Crop :- Maize. **Ref :- Bh. 59(154).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To study the effect of manures on Maize crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Jowar*. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 25.6.1959. (iv) (a) 1 ploughing and 1 cross ploughing. (b) Line sowing. (c) 10 srs./ac. (d) Rows 1½′ apart. (e) 1. (v) Nil. (vi) Jaunpur (medium). (vii) Unirrigated. (viii) 1 weeding by *khurpi* and 1 spading. (ix) 28.60″. (x) 15.9.1959.

2. TREATMENTS :

1. Control.
2. 40 lb./ac. of N as A/S.
3. 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super.
4. 40 lb./ac. of N as A/S+40 lb./ac. of K_2O as Mur. Pot.
5. 40 lb./ac. of N as A/S+40 lb./ac. of K_2O as Mur. Pot.+40 lb./ac. of P_2O_5 as Super.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 35′×35′. (b) 33′×33′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Attack of stem-borer—Endrin sprayed. (iii) Grain yield. (iv) (a) to (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 1172 lb./ac. (ii) 301.1 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5
Av. yield	768	1412	1221	1196	1261

S.E./mean = 150.6 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 59(153)**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To study the effect of manures on Maize.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Jowar.* (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 25.6.1959. (iv) (a) 1 ploughing and 1 cross ploughing with *desi* plough. (b) Line sowing. (c) 10 srs./ac. (d) Rows 1½′ apart. (e) 1. (v) Nil. (vi) Jaunpur (medium). (vii) Unirrigated. (viii) 1 weeding by spade. (ix) 25.50″. (x) 14.9.1959.

2, TREATMENTS :

1. Control.
2. 80 lb./ac. of N as A/S.
3. 80 lb./ac. of N as A/S+80 lb./ac. of P_2O_5 as Super.
4. 80 lb./ac. of N as A/S+40 lb./ac. of K_2O as Mur. Pot.
5. 80 lb./ac. of N as A/S+40 lb./ac. of K_2O as Mur. Pot.+80 lb./ac. of P_2O_5 as Super.

3. DESIGN :

(i) R.B D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 35′×35′. (b) 33′×33′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Grain yield. (iv) (a) to (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 1486 lb./ac. (ii) 325.0 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatmeat	1	2	3	4	5
Av. yield	797	1746	1688	1577	1620

S.E./mean = 162.5 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 59(160).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To test the effect of different kinds of nitrogenous fertilizers on Maize.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Jowar.* (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 27.6.1959. (iv) (a) 1 ploughing, 1 cross ploughing and 1 ploughing for sowing, all by *desi* plough. (b) Line sowing. (c) 10 srs./ac. (d) Rows 1′ apart. (e) 1. (v) Nil. (vi) Jaunpur (medium). (vii) Unirrigated. (viil) 1 weeding by spade. (ix) 23.50″. (x) 16.9.1959.

2. TREATMENTS :

T_0=Control.
T_1=30 lb./ac. of Super+30 lb./ac. of K_2O as Mur. Pot.
$T_2=T_1$+25 lb./ac. of N as A/S.
$T_3=T_1$+50 lb./ac. of N as A/S.
$T_4=T_1$+25 lb./ac. of N as Urea.
$T_5=T_1$+50 lb./ac. of N as Urea.
$T_6=T_1$+25 lb./ac. of N as A/S/N.
$T_7=T_1$+50 lb./ac. of N as A/S/N.
$T_8=T_1$+25 lb./ac. of N as A/N.
$T_9=T_1$+50 lb./ac. of N as A/N.
$T_{10}=T_1$+25 lb./ac. of N as A/C.
$T_{11}=T_1$+50 lb./ac. of N as A/C.
$T_{12}=T_1$+25 lb./ac. of N as Urea.
$T_{13}=T_1$+50 lb./ac. of N as Urea.

Urea in T_4, T_5 applied at sowing and in T_{11}, T_{12} applied 15 days before sowing in dry condition.

3. DESIGN :

(i) R.B.D. (ii) (a) 14. (b) N.A. (iii) 3. (iv) (a) 52′×23′. (b) 49′6″×22′. (v) 15″×6″. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Attack of stem borer. (iii) Grain yield. (iv) (a) to (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 811 lb./ac. (ii) 518.4 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	939	581	704	1248	744	975	518
	T_7	T_8	T_9	T_{10}	T_{11}	T_{12}	T_{13}
	1310	1020	1076	447	535	540	711

S.E./mean = 299.3 lb./ac.

EXPERIMENTS CONDUCTED BY THE FIELD EXPERIMENTAL SPECIALIST ON MAIZE CROP.

Object :—To find manurial schedules for Maize for various tracts of Bihar.

ZONE I.

TREATMENTS :

All combinations of (1), (2) and (3).

(1) 3 Levels of N as A/S : $N_0=0$, $N_1=30$ and $N_2=60$ lb./ac.
(2) 3 Levels of P_2O_5 as Super : $P_0=0$, $P_1=25$ and $P_2=50$ lb./ac.
(3) 3 Levels of K_2O as Mur. Pot. : $K_0=0$, $K_1=20$ and $K_2=40$ lb./ac.

Improved Variety

Serial no. : 1. **Block (Dist.) :** Bagaha (Champaran). **Soil type :** Sandy. **Years :** 1957 to 1959.

RESULTS :

(i) 1040 lb./ac. (ii) 143.2 lb./ac. (iii) Effects of N and P are highly significant. Effects of K and interaction P×K are significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	994	976	1024	864	978	1152	998
K_1	937	1090	1168	873	1108	1214	1065
K_2	928	1099	1140	862	1074	1232	1056
Mean	953	1055	1111	866	1053	1199	1040
N_0	802	882	914				
N_1	976	1045	1140				
N_2	1081	1239	1278				

Total number of replications = 6.

Serial no. : 2. **Block (Dist.) :** Bettiah (Champaran). **Soil type :** Sandy loam. **Years :** 1957, 58 & 59.

RESULTS

(i) 1131 lb./ac. (ii) 143.0 lb./ac. (iii) Effects of N, P and K are highly significant. Interation N×P is significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	930	1129	1168	736	953	1538	1076
K_1	1070	1186	1278	894	1079	1561	1176
K_2	1065	1072	1278	855	988	1572	1138
Mean	1022	1129	1241	828	1007	1557	1131
N_0	645	848	992				
N_1	965	983	1072				
N_2	1454	1556	1659				

No. of trials = 6.

Serial no. : 3. **Block** (**Dist.**) Govindganj (Champaran). **Soil type :** Sandy loam. **Years : 1957, 58 & 1959.**

RESULTS :

(i) 1048 lb./ac. (ii) 119.3 lb./ac. (iii) Effects of N, P and K are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	893	990	1106	859	976	1154	996
K_1	934	1026	1184	905	1019	1220	1048
K_2	954	1136	1214	926	1120	1257	1101
Mean	927	1051	1168	897	1038	1210	1048
N_0	763	903	1024				
N_1	944	1051	1120				
N_2	1074	1198	1360				

No. of trials = 6

Serial no. : 4. **Block** (**Dist.**) : Kesaria (Champaran). **Soil type :** Sandy loam. **Years : 1957 & 1959.**

RESULTS :

(i) 1287 lb./ac. (ii) 230.5lb./ac. (iii) Effects of N and P are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1111	1275	1380	1065	1271	1431	1256
K_1	1230	1316	1371	1056	1399	1463	1306
K_2	1138	1335	1422	996	1358	1540	1298
Mean	1160	1309	1391	1039	1343	1478	1287
N_0	905	1074	1138				
N_1	1198	1362	1467				
N_2	1376	1490	1568				

No. of trials = 3

Serial no. : 5. **Block (Dist.) :** Madhuban (Champaran). **Soil type :** Sandy. **Years :** 1957, to 1959.

RESULTS :

(i) 1295 lb./ac. (ii) 151.6 lb./ac. (iii) Effects of N and P are highly significant. Interaction N×P is significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1168	1284	1390	1088	1262	1492	1281
K_1	1230	1284	1410	1086	1284	1554	1308
K_2	1198	1291	1399	1154	1298	1435	1296
Mean	1199	1286	1400	1109	1281	1494	1295
N_0	997	1092	1239				
N_1	1193	1335	1316				
N_2	1406	1433	1643				

Total number of replications = 6.

Serial no. : 6. **Block (Dist.) :** Motihari (Champaran). **Soil type :** Sandy. **Years :** 1957 and 1958.

RESULTS :

(i) 1691 lb./ac. (ii) 320.2 lb./ac. (iii) Effects of N and P are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1317	1762	1803	1365	1694	1824	1628
K_1	1371	1584	2026	1464	1656	1862	1661
K_2	1568	1814	1978	1522	1814	2023	1786
Mean	1419	1720	1936	1450	1721	1903	1691
N_0	1238	1416	1697				
N_1	1447	1766	1951				
N_2	1570	1978	2160				

Total number of replications = 4.

Serial no. : 7 **Block (Dist.) :** Nautan (Champaran). **Soil type :** Sandy. **Years :** 1957 to 1959.

RESULTS :

(i) 1167 lb./ac. (ii) 124.9 lb./ac. (iii) Effects of N and P are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	985	1200	1328	967	1234	1312	1171
K_1	1022	1230	1255	981	1207	1319	1169
K_2	1026	1147	1312	985	1191	1310	1162
Mean	1011	1192	1298	978	1211	1314	1167
N_0	821	1006	1106				
N_1	1067	1216	1348				
N_2	1145	1355	1440				

Total number of replications = 6.

Serial no. : 8. **Block (Dist.) :** Pipra (Champaran). **Soil type :** Sandy loam. **Years :** 1956 and 1957.

RESULTS :

(i) 1403 lb./ac. (ii) 146.5 lb./ac. (iii) Effects of N, P, K and interaction P×K are highly significant. Interactions N×P and N×K are significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1271	1252	1358	864	1344	1673	1294
K_1	1248	1572	1586	846	1591	1970	1469
K_2	1284	1385	1664	887	1550	1897	1445
Mean	1268	1403	1536	866	1495	1847	1403
N_0	818	805	974				
N_1	1266	1563	1655				
N_2	1718	1842	1979				

Total no. of replications = 3.

Serial no. : 9. **Block (Dist.) :** Sikarpur (Champaran). **Soil type :** Loam. **Years :** 1956 to 1959.

RESULTS :

(i) 1198 lb./ac. (ii) 116.8 lb./ac. (iii) Effects of N, P, K and interaction N×P are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	978	1195	1275	940	1217	1291	1149
K_1	1060	1228	1341	998	1259	1373	1210
K_2	1071	1271	1361	1025	1275	1402	1234
Mean	1036	1231	1326	988	1250	1355	1198
N_0	823	1024	1117				
N_1	1060	1330	1361				
N_2	1227	1339	1499				

Total no. of replications = 9.

Serial no. : 10. **Block (Dist.) :** Sugauli (Champaran). **Soil type :** Loam. **Years :** 1957 to 1959.

RESULTS :

(i) 1335 lb./ac. (ii) 202.8 lb./ac. (iii) Effects of N and P are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1168	1378	1396	1093	1346	1504	1314
K_1	1248	1399	1463	1161	1456	1492	1370
K_2	1232	1351	1383	1102	1399	1465	1322
Mean	1216	1376	1414	1119	1400	1487	1335
N_0	1029	1150	1177				
N_1	1250	1483	1467				
N_2	1369	1495	1598				

Total no. of replications = 6.

Serial no. : 11. **Block (Dist.)** : Dalsingsarai (Darbhanga). **Soil type** : Sandy. **Years** : 1956 to 1959.

RESULTS :

(i) 1819 lb./ac. (ii) 267.2 lb./ac. (iii) Effects of N, P and interaction N×P are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1508	1760	1999	1411	1668	2189	1756
K_1	1637	1838	2062	1481	1810	2246	1846
K_2	1728	1735	2103	1402	1910	2263	1855
Mean	1624	1778	2055	1431	1793	2233	1819
N_0	1171	1426	1697				
N_1	1699	1786	1894				
N_2	2004	2120	2573				

Total number of replications = 8.

Serial no. 12. : **Block (Dist.)** : Samastipur (Darbhanga). **Soil type** : Sandy loam. **Years** : 1956 and 1957.

RESULTS :

(i) 2244 lb./ac. (ii) 244.9 lb./ac. (iii) Effects of N, P and K are higly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1794	2064	2345	1611	2190	2402	2068
K_1	2064	2320	2503	1920	2283	2683	2295
K_2	2064	2366	2676	2002	2400	2704	2369
Mean	1974	2250	2508	1844	2291	2596	2244
N_0	1572	1801	2160				
N_1	1950	2356	2567				
N_2	2400	2592	2798				

Total number of replications = 6.

Serial no. : 13. **Block (Dist.)** : Bhore (Saran). **Soil type** : Loam. **Years** : 1957 and 1959.

RESULTS :

(i) 1084 lb./ac. (ii) 194.5 lb./ac. (iii) Effects of N and P are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	882	996	1175	731	1065	1257	1018
K_1	891	1070	1316	786	1170	1321	1092
K_2	882	1161	1385	837	1198	1394	1143
Mean	885	1076	1292	785	1144	1324	1084
N_0	613	791	951				
N_1	974	1111	1348				
N_2	1069	1326	1577				

Total number of replications = 3

Serial no. : 14. **Block (Dist.) :** Chapra Mufassil (Saran). **Soil type :** Sandy. **Years :** 1957 and 1959.

RESULTS :

(i) 1974 lb./ac. (ii) 343.1 lb./ac. (iii) Effects of N and P are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1570	2009	2350	1677	1950	2334	1976
$_1$	1884	2020	2244	1550	2055	2343	1983
K_2	1652	1945	2292	1677	1975	2238	1963
Mean	1635	1991	2295	1635	1983	2305	1974
N_0	1230	1648	2027				
N_1	1714	2007	2227				
N_2	1963	2320	2632				

Total nubmber of replications = 6.

Serial no. : 15. **Block (Dist.) :** Ekma (Saran). **Soil type :** Sandy loam. **Years :** 1957 and 1959.

RESULTS :

(i) 1362 lb./ac. (ii) 137.4 lb./ac. (iii) Effects of N and P are highly significant. Interactions N×P and N×K are significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1114	1286	1574	912	1310	1752	1325
K_1	1166	1341	1593	953	1426	1721	1367
K_2	1114	1498	1574	946	1402	1838	1395
Mean	1131	1375	1580	937	1379	1770	1362
N_0	785	926	1101				
N_1	1107	1430	1601				
N_2	1502	1769	2040				

Total number of replications = 4.

Serial no. : 16. **Block (Dist.) :** Gopalganj (Saran). **Soil type :** Sandy loam. **Years :** 1956, 57 and 1959.

RESULTS :

(i) 1407 lb./ac. (ii) 165.5 lb./ac. (iii) Effects of N and P are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1122	1465	1511	1024	1438	1636	1366
K_1	1170	1465	1659	1108	1518	1668	1431
K_2	1179	1488	1600	1127	1454	1687	1423
Mean	1157	1473	1590	1086	1470	1664	1407
N_0	871	1154	1234				
N_1	1234	1550	1625				
N_2	1367	1714	1911				

Total number of replications = 6

Serial no. : 17. **Block (Dist.) :** Kuchaikot (Saran). **Soil type :** Sandy. **Years :** 1956, 1957 and 1959.

RESULTS :

(i) 1727 lb./ac. (ii) 265.5 lb./ac. (iii) Effects of N, P and K are highly significant. (iv) Av.yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1335	1705	1838	1252	1689	1936	1626
K_1	1513	1762	1972	1392	1853	2002	1749
K_2	1547	1952	1920	1454	1924	2041	1806
Mean	1465	1806	1910	1366	1822	1993	1727
N_0	1086	1543	1470				
N_1	1627	1842	1998				
N_2	1682	2034	2263				

Total number of replications = 6.

Serial no : 18. **Block (Dist.) :** Maharajganj (Saran). **Soil type :** Sandy. **Years :** 1956, 1957 and 1959.

RESULTS :

(i) 1341 lb./ac. (ii) 275.3 lb./ac. (iii) Effects of N and P are highly significant. Effect of K is significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	1191	1273	1326	1051	1220	1518	1263
K_1	1271	1348	1449	1092	1348	1627	1356
K_2	1280	1438	1499	1161	1385	1671	1406
Mean	1247	1353	1425	1101	1318	1605	1341
N_0	1029	1136	1140				
N_1	1218	1328	1408				
N_2	1495	1595	1726				

Total number of replications = 6.

Serial no : 19. **Block (Dist.) :** Mirganj (Saran). **Soil type :** Sandy. **Years :** 1957 and 1959.

RESULTS :

(i) 1257 lb./ac. (ii) 174.4 lb./ac. (iii) Effects of N, P, K and interaction N×P are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	943	1241	1361	806	1193	1546	1182
K_1	1118	1296	1382	936	1289	1570	1265
K_2	1128	1323	1522	905	1419	1649	1324
Mean	1063	1287	1422	882	1300	1588	1257
N_0	727	953	967				
N_1	1149	1351	1402				
N_2	1313	1556	1896				

Total number of replications = 4.

Serial no. : 20. **Block (Dist.) :** Siwan (Saran). **Soil type :** Sandy. **Years :** 1956 and 1957.

RESULTS :

(i) 1421 lb./ac. (ii) 120.0 lb./ac. (iii) Effects of N, P, K and interaction N×P are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	1022	1238	1327	1138	1159	1289	1195
N_1	1392	1474	1484	1413	1423	1515	1450
N_2	1495	1652	1707	1567	1649	1639	1618
Mean	1303	1455	1506	1373	1410	1481	1421
K_0	1241	1430	1447				
K_1	1310	1426	1495				
K_2	1358	1508	1577				

Total number of replications = 4.

II. LCOCAL VARIETY

Serial no : 21. **Block (Dist.) :** Hajipur (Muzaffarpur). **Soil type :** Doras. **Years :** 1956. to 1958.

RESULTS :

(i) 1903 lb./ac. (ii) 267.3 lb./ac. (iii) Main effects of N and P are highly significant. No other effect is significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	1575	1546	1685	1389	1697	1721	1602
N_1	1853	1971	1910	1757	1923	2054	1911
N_2	2112	2275	2204	2014	2204	2372	2197
Mean	1847	1931	1933	1720	1941	2049	1903
P_0	1652	1764	1743				
P_1	1908	1958	1959				
P_2	1980	2071	2096				

Total number of replications = N.A.

Serial no : 22. **Block (Dist.)** Mahua (Muzaffarpur). **Soil type :** Loam. **Years :** 1957 to 1959.

RESULTS :

(i) 1253 lb./ac. (ii) 87.6 lb./ac. (iii) Main effects of N, P and interaction N×P are highly significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	930	937	976	763	919	1161	948
N_1	1186	1275	1303	981	1319	1465	1255
N_2	1513	1588	1568	1266	1575	1828	1556
Mean	1210	1267	1282	1003	1271	1485	1253
P_0	962	1015	1033				
P_1	1223	1285	1305				
P_2	1444	1502	1508				

Total number of replications = N.A.

Serial no. : 23. **Block (Dist.) :** Pateypur (Muzaffarpur). **Soil type :** Loam. **Years : 1958 and 1959.**

RESULTS

(i) 895 lb./ac. (ii) 61.1 lb./ac. (iii) Main effects of N, P and interaction N×P are highly significant. Interaction P×K is significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	699	741	759	571	782	846	733
N_1	896	882	846	699	951	974	875
N_2	1038	1092	1102	690	951	1591	1077
Mean	878	905	902	653	895	1137	895
P_0	620	709	631				
P_1	907	877	900				
P_2	1106	1129	1176				

Total number of replications = N.A.

Serial no. : 24. **Block (Dist.)** Muzaffarpur Sadar (Muzaffarpur). **Soil type :** Loam. **Years :** 1957 and 1958.

RESULTS :

(i) 1632 lb./ac. (ii) 248.5 lb./ac. (iii) Main effects of N, P and K are highly significant. Interaction N×P is significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	1303	1508	1382	1063	1416	1714	1398
N_1	1399	1748	1639	1361	1591	1834	1595
N_2	1748	1985	1971	1440	1951	2314	1902
Mean	1483	1747	1664	1288	1653	1954	1632
P_0	1196	1303	1364				
P_1	1457	1834	1666				
P_2	1796	2105	1961				

Total number of replications = N.A.

Serial no. : 25. **Block (Dist.) :** Sakra (Muzaffarpur). **Soil type :** Doras. **Years :** 1957 and 1959

RESULTS :

(i) 934 lb./ac. (ii) 140.3 lb./ac. (iii) Main effects of N and P are highly significant. Main effect of K is significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	823	843	854	768	847	905	840
N_1	854	960	974	874	950	963	929
N_2	956	1063	1076	926	1052	1118	1032
Mean	878	955	968	856	950	995	934
P_0	785	888	895				
P_1	898	922	1028				
P_2	950	1056	980				

Total number of replications = N.A.

Serial no. : 26. **Block (Dist.)** : Sitamarhi (Muzaffarpur). **Soil type** : Sandy loam. **Years** : 1956 and 1958.

RESULTS :

(i) 1112 lb./ac. (ii) 131.2 lb./ac. (iii) Main effects of N and P are highly significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	908	926	904	802	908	1028	913
N_1	1059	1076	1071	1025	1070	1111	1069
N_2	1309	1306	1451	1210	1327	1529	1355
Mean	1092	1103	1142	1012	1102	1223	1112
P_0	1001	1028	1008				
P_1	1090	1077	1138				
P_2	1185	1203	1280				

Total number of replications = N.A.

Serial no. : 27. **Block (Dist.)** : Dharhara (Purnea). **Soil type** : Sandy loam. **Years** : 1957 and 1958.

RESULTS :

(i) 739 lb./ac. (ii) 73.0 lb./ac. (iii) Main effects of N and P are highly significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	608	654	640	558	645	699	634
N_1	690	750	745	640	759	786	728
N_2	841	873	846	745	878	937	853
Mean	713	759	744	648	761	807	739
P_0	644	654	645				
P_1	741	782	759				
P_2	754	841	827				

Total number of replications = N.A.

Serial no. : 28. **Block (Dist.)** : Katihar (Purnea). **Soil type** : Sandy. **Years** : 1957 to 1959.

RESULTS :

(i) 1113 lb./ac. (ii) 79.4 lb./ac. (iii) Main effects of N, P, K and interactions N×K, N×P are highly significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	905	953	975	780	965	1088	944
N_1	1063	1134	1079	937	1116	1223	1092
N_2	1212	1328	1362	1093	1257	1552	1301
Mean	1060	1138	1139	937	1113	1288	1113
P_0	874	967	969				
P_1	1077	1145	1116				
P_2	1229	1303	1331				

Total number of replications = N.A.

ZONE II

TREATMENTS :

All combinations of (1), (2) and (3)

(1) Levels of N as A/S : $N_0=0$, $N_1=25$ and $N_2=50$ lb./ac.
(2) Levels of P_2O_5 as Super : $P_0=0$, $P_1=20$ and $P_2=40$ lb./ac.
(3) Levels of K_2O as Mur. Pot. : $K_0=0$, $K_1=20$ and $K_2=40$ lb./ac.

I. IMPROVED VARIETY

Serial no. : 1. **Block (Dist.) :** Chandil (Singhbhum). **Soil type :** Sandy. **Years :** 1957 and 1958.

RESULTS :

(i) 681 lb./ac. (ii) 228.7 lb./ac. (iii) Effects of N, P and K are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	552	662	699	501	621	792	638
K_1	648	648	723	555	621	843	673
K_2	641	734	823	645	693	861	733
Mean	614	681	748	567	645	832	681
N_0	459	583	658				
N_1	597	634	703				
N_2	785	826	885				

No. of trials = 4.

Serial no. : 2. **Block (Dist.) :** Topchanchi (Dhanbad). **Soil type :** Sandy loam. **Years :** 1958 and 1959.

RESULTS :

(i) 1007 lb./ac. (ii) 110.7 lb./ac. (iii) Main effects of N, P, K and interaction N×P are highly significant. Interaction N×K and P×K are significant. (iv) Av. yield of grain lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	782	830	850	734	864	864	821
N_1	953	1090	1063	919	1056	1131	1035
N_2	1131	1159	1200	953	1145	1392	1163
Mean	955	1026	1038	869	1022	1129	1007
P_0	864	843	898				
P_1	967	1022	1077				
P_2	1035	1214	1138				

No. of trials = N.A.

Serial no. : 3. **Block (Dist.) :** Dumka Mufassil (Dumka). **Soil type :** Clayey. **Years :** 1956 and 1957.

RESULTS :

(i) 1030 lb./ac. (ii) 121.9 lb./ac. (iii) Main effects of N, P and K are highly significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	675	710	716	624	720	758	701
N_1	1118	1166	1097	902	1094	1385	1127
N_2	1251	1248	1289	991	1405	1392	1263
Mean	1015	1041	1034	839	1073	1178	1030
P_0	792	826	898				
P_1	1090	1073	1056				
P_2	1162	1224	1148				

Total number of replications = N.A.

Serial no. 4. **Block (Dist.)** : Chatra (Hazaribagh). **Soil type** : Loam. **Years** : 1956 to 1959.

RESULTS :

(i) 1321 lb./ac. (ii) 286.7 lb./ac. (iii) Main effects of N, P and K are highly significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	979	1102	1131	833	1181	1198	1071
N_1	1311	1418	1389	1106	1418	1594	1373
N_2	1392	1651	1522	1289	1611	1664	1521
Mean	1227	1390	1347	1076	1403	1485	1321
P_0	963	1138	1126				
P_1	1299	1491	1419				
P_2	1419	1541	1496				

Total number of replications = N.A.

Serial no. : 5. **Block (Dist.)** : Garhwa (Palamau). **Soil type :** Red laterite. **Years :** 1957 and 1958.

RESULTS :

(i) 749 lb./ac. (ii) 225.5 lb./ac. (iii) Main effects of N, P and K are highly significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	494	466	603	457	475	631	521
N_1	631	832	860	558	759	1006	774
N_2	804	942	1106	841	996	1015	951
Mean	643	747	856	619	743	884	749
P_0	603	622	631				
P_1	575	777	878				
P_2	751	841	1060				

Total number of replications = N.A.

Serial no. : 6. **Block (Dist.) :** Latehar (Palamau). **Soil type :** Red laterite. **Years :** 1957 to 1959.

RESULTS

(i) 1036 lb./ac. (ii) 295.2 lb./ac. (iii) Main effects of N, P and interaction P×K are highly significant. Main effect of K is significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	770	983	832	754	880	951	862
N_1	940	1063	1189	958	1068	1166	1064
N_2	1138	1209	1198	1081	1182	1282	1182
Mean	949	1085	1073	931	1043	1133	1036
P_0	971	990	832				
P_1	937	1004	1189				
P_2	940	1262	1198				

Total number of replications = N.A.

Serial no. : 7. **Block (Dist.) :** Barharwa (Santhal Parganas). **Soil type :** Loam. **Years :** 1957 to 1959.

RESULTS :

(i) 1235 lb./ac. (ii) 151.7 lb./ac. (iii) Main effects of N, P, K and interactions N×P, N×K are highly significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	896	1083	1081	878	1013	1169	1020
N_1	1140	1309	1329	1075	1304	1399	1259
N_2	1380	1534	1363	1226	1359	1692	1426
Mean	1139	1309	1258	1060	1225	1420	1235
P_0	947	1138	1094				
P_1	1123	1338	1215				
P_2	1346	1450	1464				

Total number of replications = N.A.

Serial no : 8. **Block (Dist.) :** Godda (Santhal Parganas). **Soil type :** Loam. **Years :** 1957 and 1958.

RESULTS :

(i) 1629 lb./ac. (ii) 165.7 lb./ac. (iii) Main effects of N, P and K are highly significant. Interaction P×K is significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	1146	1337	1316	958	1379	1462	1266
N_1	1577	1772	1825	1476	1738	1960	1725
N_2	1738	1943	2002	1570	1943	2169	1894
Mean	1487	1684	1714	1335	1687	1864	1629
P_0	1191	1306	1508				
P_1	1546	1765	1748				
P_2	1724	1981	1887				

Total number of replications = N.A.

Serial no. 9. **Block (Dist.) :** Jarmundi (Santhal Parganas). **Soil type :** Sandy. **Years :** 1956,57

RESULTS :

(i) 722 lb./ac. (ii) 102.0 lb./ac. (iii) Main effects of N and P are highly significant. Main effect of K is significant (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	526	565	592	457	592	633	561
N_1	734	784	775	672	818	802	764
N_2	821	832	866	743	848	928	840
Mean	694	727	744	624	753	788	722
P_0	567	633	672				
P_1	752	757	750				
P_2	761	791	812				

Total number of replications = N.A.

Serial no. : 10. **Block (Dist.) :** Mahagaon (Santhal Parganas). **Soil type :** Sandy. **Years :** 1957 to 1959.

RESULTS :

(i) 1625 lb./ac. (ii) 184.7 lb./ac. (iii) Main effects of N, P, K and interaction N×P are highly significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	1289	1366	1425	1245	1419	1416	1360
N_1	1560	1702	1704	1562	1695	1709	1655
N_2	1779	1853	1947	1635	1887	2057	1860
Mean	1543	1640	1692	1481	1667	1727	1625
P_0	1389	1478	1575				
P_1	1568	1707	1726				
P_2	1671	1736	1774				

Total number of replications = N.A.

Serial no. : 11. **Block (Dist.) :** Maheshpur (Santhal Parganas). **Soil type :** Sandy loam. **Years :** 1957 to 1959.

RESULTS :

(i) 579 lb./ac. (ii) 111.5 lb./ac. (iii) Main effects of N, P, K are highly significant. No other effect is significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	373	382	399	347	391	416	385
N_1	601	629	642	496	720	656	624
N_2	770	700	714	613	782	789	728
Mean	581	570	585	485	631	620	579
P_0	464	489	503				
P_1	673	605	615				
P_2	607	617	637				

Total number of replications = N.A.

Serial no. : 12. **Block (Dist.) :** Pakur (Santhal Parganas). **Soil type :** Clayey. **Years :** 1956 to 1959.

RESULTS :

(i) 889 lb./ac. (ii) 47.3 lb./ac. (iii) Main effects of N, P, K and interactions N×P and P×K are highly significant. Interaction N×K is significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	564	658	643	552	643	670	622
N_1	900	991	1034	775	1015	1135	975
N_2	1008	1097	1101	862	1131	1212	1068
Mean	824	915	926	730	930	1006	889
P_0	667	747	775				
P_1	861	946	986				
P_2	945	1053	1020				

Total number of replications = N.A.

Serial no. : 13. **Block (Dist.) :** Paraiyahat (Santhal Parganas). **Soil type :** Sandy. **Years :** 1957 and 1958.

5. RESULTS :

(i) 682 lb./ac. (ii) 109.6 lb./ac. (iii) Main effects of N and P are highly significant. Main effect of K and interactions N×P and P×K are significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	622	608	622	562	631	658	617
N_1	654	786	690	645	754	731	710
N_2	686	786	686	626	800	731	719
Mean	654	727	666	611	728	707	682
P_0	603	617	613				
P_1	690	759	736				
P_2	667	805	649				

Total number of replications = N.A.

Serial no. : 14. **Block (Dist.) :** Ramgarh (Santhal Parganas). **Soil type :** Loam soil. **Years :** 1956 and 1957.

RESULTS :

(i) 752 lb./ac. (ii) 207.2 lb./ac. (iii) Main effects of N and P are highly signifiant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	432	524	624	425	593	562	527
N_1	758	867	764	634	895	860	796
N_2	843	867	1087	819	950	1028	932
Mean	678	753	825	626	813	817	752
P_0	558	566	754				
P_1	739	869	830				
	736	823	891				

Total number of replications = N.A.

II Local Variety

Serial no. : 20. **Block (Dist.) :** Sahebganj (Santhal Parganas). **Soil type :** Loam. **Years :** 1956, 57 and 1959.

RESULTS :

(i) 1072 lb./ac. (ii) 186.9 lb./ac. (iii) Effects of N, P and K are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	N_0	N_1	N_2	Mean
K_0	758	872	858	691	871	927	830
K_1	987	1148	1206	943	1178	1220	1114
K_2	1174	1133	1316	1047	1302	1472	1274
Mean	973	1118	1127	894	1117	1206	1072
N_0	827	921	934				
N_1	1006	1178	1167				
N_2	1086	1253	1281				

Crop :- Maize. **Ref :- Bh. 59(202).**

Site :- Soil Cons. Res. Demons. and Trg. Centre, Chatra (Nepal). **Type :- 'C'.**

Object :—To find out a suitable cultivation practice which will reduce the soil loss in run off to a minimum.

1. BASAL CONDITIONS :

(i) (a) and (b) Nil. (c) No. (ii) (a) Gravelly sandy loam. (b) Refer soil analysis, Chatra. (iii) 30, 31.5.1959. (iv) (a) 2 ploughings with *desi* plough. (b) Line sowing. (c) 20 lb./ac. (d) 9″×18″. (e) 1. (v) 150 lb./ac. of Super+100 lb./ac. of A/S, ½ as basal dose and ½ as top dressing after 4 weeks of sowing. (vi) Local. (vii) Unirrigated. (viii) Weeding and hoeing was done twice. (ix) 62″. (x) 7, 9.9.1959.

2. TREATMENTS :

1. Strip cutting along the contour (12′ wide maize strip).
2. Contour cultivation with contour furrows at intervals of 20′.
3. Up and down cultivation.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) 75′×50′. (iii) 5. (iv) (a) and (b) 50′×24′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Stem borer attack was noted. (iii) Yield of grain. (iv) (a) to (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 2570 lb./ac. (ii) 375.0 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3
Av. yield	1936	3069	2705

S.E./mean = 167.7 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 55(208).**

Site :- Citrus Res. Stn., Chianki. **Type :- 'C'.**

Object :—To find out suitable spacing between rows and plants.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Clayey loam. (b) N.A. (iii) 27 to 30.6.1955 and 9, 14, 16.7.1955. (iv) (a) 3 ploughings. (b) Open the furrows with hand hoe and placing the seed. (c) 8 srs./ac. (d) As per treatments. (e) 2. (v) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super, half applied in furrows at sowing and the other half at earthing. (vi) Kalimpong (late). (vii) Nil. (viii) 7 weedings, 5 hoeings and earthing up. (ix) 35.54″. (x) 2, 3, 9, 16, 18.10.1955.

2. TREATMENTS :

Main-plot treatments :
2 row spacings : $R_1=2'$ and $R_2=2\frac{1}{2}'$.
Sub-plot treatments :
2 plant spacings : $P_1=9''$ and $P_2=12''$.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication ; 2 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) 72′×15′. (b) 70.5′×13.5′. (v) $1\frac{1}{2}'\times1\frac{1}{2}'$. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Number and weight of cobs, grain and straw yield. (iv) (a) 1955—1956. (b) No. (c) Nil. (v) (a) Kanke. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1149 lb./ac. (ii) (a) 263.6 lb./ac. (b) 301.4 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	P_1	P_2	Mean
R_1	923	1166	1044
R_2	1243	1262	1253
Mean	1083	1214	1149

S.E. of difference of two
1. R marginal means = 107.6 lb./ac.
2. P marginal means = 123.0 lb./ac.
3. P means at the same level of R = 173.9 lb./ac.
4. R means at the same level of P = 163.5 lb./ac.

Crop :- Maize *(Kharif).* **Ref :- Bh. 56(146).**
Site :- Citrus Res. Stn., Chianki. **Type :- 'C'.**

Object :—To find out the best spacing for Maize.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Clayey loam. (b) N.A. (iii) 18 to 26.6.1956. (iv) (a) 3 ploughings. (b) Open the furrows with hand hoes and place the seeds. (c) 8 srs./ac. (d) As per treatments. (e) 2. (v) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super, $\frac{1}{2}$ at sowing and $\frac{1}{2}$ at earthing. (vi) T—41. (vii) Nil. (viii) 2 weedings and hoeings. (ix) 56.58″. (x) 15 to 19.10.1956.

2. TREATMENTS :

Strips in one direction :
3 row spacings : $R_1=1\frac{1}{2}'$, $R_2=2'$ and $R_3=2\frac{1}{2}'$.
Strips in orthogonal direction :
3 plant spacings : $P_1=9''$, $P_2=12''$ and $P_3=15''$.

3. DESIGN :

(i) Strip-plot. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 52.5′×17′. (b) 50′×14.5′. (v) 2.5′×2.5′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Number and weight of cobs, grain and straw yield. (iv) (a) 1955—1956. (b) No. (c) Nil. (v) (a) Kanke, Putida, Neterhat. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2253 lb./ac. (ii) (a) 306 lb./ac. (b) 1186 lb./ac. (c) 98 lb./ac. (iii) Interaction R×P is highly significant. (iv) Av. yield of grain in lb./ac.

	R_1	R_2	R_3	Mean
P_1	2256	2009	2318	2194
P_2	2627	2380	2473	2493
P_3	2071	2441	1700	2071
Mean	2318	2277	2164	2253

S.E. of difference of two

1. R marginal means = 124 lb./ac.
2. P marginal means = 484 lb./ac.
3. P means at the same level of R = 110 lb./ac.
4. R means at the same level of P = 487 lb./ac.

Crop :- Maize. **Ref :- Bh. 55(41).**

Site :- Naya Dumka Farm, Dumka. **Type :- :C'.**

Object :—To find out suitable spacing for Maize crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Maize. (c) 30 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy loam. (b) N.A. (iii) 30.6.1955. (iv) (a) 1 tractor ploughing and 3 *desi* ploughings. (b) and (c) N.A. (d) 2′×9″. (e) 2. (v) 20 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 at the time of sowing and 20 lb./ac. of N as A/S at the time of earthing. (vi) Jaunpur—(early). (vii) Unirrigated. (viii) Weeding and interculturing. (ix) 30.03″. (x) 23.9.1955.

2. TREATMENTS:

Same as in expt. no. 55(208) on page 458.

3. DESIGN:

(i) Split-plot. (ii) (a) 2 main-plots/block. (b) 2 sub-plots/main-plot. (iii) 6. (iv) (a) and (b) 32′×18′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Fair ; no lodging. (ii) Nil. (iii) Yield of grain and straw. (iv) (a) to (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 934 lb./ac. (ii) (a) 292.6 lb./ac. (b) 442.7 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	P_1	P_2	
R_1	971	937	954
R_2	1113	715	914
Mean	1042	826	934

S.E. of difference of two

1. R marginal means = 119.5 lb./ac.
2. P marginal means = 180.8 lb./ac.
3. P means at the same level of R = 255.6 lb./ac.
4. R means at the same level of P = 216.7 lb./ac

Crop :- Maize. **Ref Bh. 55(8).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'C'.**

Object :—To find out the best spacing for Maize.

1. BASAL CONDITIONS :

(i) (a) *Jowar*+Soyabean—Fallow—Maize—Fallow. (b) Fallow. (c) Nil. (ii) (a) Clayey loam. (b) N.A. (iii) 19.6.1955 (iv) (a) Ploughing by *desi* plough. (b) Sown behind the plough. (c) 8 srs./ac. (d) As per treatments. (e) —. (v) 40 lb./ac. of N as A/S+P_2O_5 at 40 lb./ac. as Super. (vi) Kalimpong (medium). (vii) Unirrigated. (viii) Weeding once, earthing and thinning once. (ix) 30.76". (x) 6, 7.10.1955.

2. TREATMENTS :

Same as in expt. 55(208) on page 458.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication ; 2 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) and (b) 72'×15'. (v) No. (vi) Yes.

4. GENERAL :

(i) Medium ; no lodging. (ii) Attack of stem-borer, leaf eaters and termites. Dusted with B.H.C. (iii) Straw and grain yield. (iv) (a) to (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 519 lb /ac. (ii) (a) 117.8 lb./ac. (b) 161.6 lb./ac. (iii) Main effect of P is highly significant. (iv) Av yield of grain in lb./ac.

	P_1	P_2	Mean
R_1	664	411	538
R	615	387	501
	640	399	519

S.E. of difference of two
1. R marginal means = 48.1 lb./ac.
2. P marginal means = 66.0 lb./ac.
3. P means at the same level of R = 93.4 lb./ac.
4. R means at the same level of P = 81.7 lb./ac.

Crop :- Maize ***(Kharif).*** **Ref :- Bh. 56(97).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'C'.**

Object :—To find out the best spacing for Maize.

1. BASAL CONDITIONS :

(i) (a) Maize—Wheat—Maize. (b) Wheat. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Kanke. (iii) 8, 9.6.1956. (iv) (a) 3 ploughings followed by beaming. (b) Behind the plough. (c) 8 srs./ac. (d) As per treatments. (e) 2. (v) 20 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super at sowing in furrows and 20 lb./ac. of N as A/S at earthing. (vi) Kalimpong (late). (vii) Nil. (viii) 3 earthings and 3 weedings. (ix) 22.97". (x) 20, 21.9.1956.

2. TREATMENTS :

Same as in expt. no. 56(146) on page 459.

3. DESIGN :

(i) Strip-plot. (ii) (a) 9. (b) 116'×97'. (iii) 4. (iv) (a) 36'×30'. (b) 34'.6"×28'.6". (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Number and weight of cobs, grain and straw yield. (iv) (a) 1955—1957. (b) Yes. (c) Nil. (v) (a) Putida, Neterhat and Chianki. *(b)* N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1395 lb./ac. (ii) (a) 286 lb./ac. (b) 289 lb /ac. (c) 271 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	P_1	P_2	P_3	Mean
R_1	1256	1412	1552	1407
R_2	1358	1779	1290	1476
R_3	1452	1381	1074	1302
Mean	1355	1524	1305	1395

S.E. of difference of two

1. P marginal means = 117 lb./ac.
2. R marginal means = 118 lb./ac.
3. R means at the same level of P = 184 lb./ac.
4. P means at the same level of R = 195 lb./ac.

Crop :- Maize ***(Kharif).*** **Ref :- Bh. 57(47).**
Site :- Agri. Res. Instt., Kanke. **Type :- 'C'.**

Object :—To find out the best spacing for Maize.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Oats and peas. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Kanke. (iii) 25, 26, 27.7 1957. (iv) (a) 2 ploughings. (b) To open furrow with hand and place the seeds. (c) 8 srs./ac. (d) As per treatments. (e) 2. (v) 20 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super at sowing in furrows and 20 lb./ac. of N at earthing. (vi) Kalimpong. (vii) Unirrigated. (viii) Weeding and hoeing with spade. (ix) 27.51". (x) 10.10.1957.

2. TREATMENTS :

Main-plot treatments :
3 row spacings : R_1=18", R_2=24" and R_3=30".

Sub-plot treatments :
3 plant spacings : P_1=9", P_2=12", and P_3=15".

3. DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/replication ; 3 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) and (b) 36'×30'. (v) Nil. (vi) Yes.

4. GENERAL :

(i) No lodging. (ii) Nil. (iii) Number of cobs, grain and straw yield. (iv) (a) to (c) No. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 353 lb./ac. (ii) (a) 179.5 lb./ac. (b) 178.5 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	R_1	R_2	R_3	Mean
P_1	403	397	213	338
P_2	521	441	305	422
P_3	251	368	275	298
Mean	392	402	264	353

S.E. of difference of two

1. R marginal means = 73.3 lb./ac.
2. P marginal means = 72.9 lb./ac.
3. P means at the same level of R = 126.9 lb./ac.
4. R means at the same level of P = 126.4 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 58(42).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'C'.**

Object :—To study the effect of leguminous crops on Maize yield.

1. BASAL CONDITIONS :

(i) (a) Maize+Legumes—Wheat. (b) Wheat. (c) 20 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super. (ii) (a) Clayey. (b) Refer soil analysis, Kanke. (iii) 27 to 30.6.1958. (iv) (a) 3 ploughings. (b) Behind the plough. (c) 8 srs./ac. (d) 1′×2′. (e) N.A. (v) 20 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super at sowing and 20 lb./ac. of N at earthing up. (vi) Kalimpong. (vii) Nil. (viii) 2 weedings, 2 hoeings and earthing up. (ix) 37″. (x) 27.9.1958.

2. TREATMENTS :

T_1=Maize+groundnut,
T_2=Maize+cowpea.
T_3=Maize+*kalai.*
T_4=Maize+*moong.*
T_5=Maize+*dhaincha.*
T_6=Maize alone.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 44′×25′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Not satisfactory. (ii) Attack of leaf roll. Treated with Endrin. (iii) Grain and straw yield. (iv) (a) 1958—1960. (b) Yes. (c) Nil. (v) (a) Putida, and Musheri. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 242.7 lb./ac. (ii) 124.8 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	469	181	148	230	272	156

S.E./mean = 62.4 lb./ac.

Crop :- Maize *(Khraif)*. **Ref :- Bh. 58(4).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'C'.**

Object :—To study the effect of leguminous crops on Maize yield.

1. BASAL CONDITIONS :

(i) (a) Maize+Legumes—Wheat. (b) Wheat. (c) 20 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy loam. (b) Refer soil analyis, Kanke. (iii) 27 to 30.6.1958. (iv) (a) 3 ploughings. (b) Maize sown in lines, groundnut on ridges, rest behind the plough. (c) 8 srs/ac. (d) 2′×1′. (e) —. (v) 20 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super at time of sowing in furrows and 20 lb./ac. of N as A/S at earthing time. (vi) Maize T_{41}. (vii) Nil. (viii) 2 weedings and 2 earthing. (ix) 83″. (x) 27.9.1958.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 58(42) above.

4. GENERAL :

(i) Not good. (ii) *Kalai* and *Moong* dusted with 5% BHC on 13.8.1958 at 20 lb./ac. (iii) Grain and straw yield. (iv) (a) 1958—1960. (b) Yes. (c) Nil. (v) (a) Putida and Musheri. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 243.3 lb./ac. (ii) 122.8 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	469	183	149	229	153	277

S.E./mean = 61.4 lb./ac.

Crop :- Maize *(Kharif.)* **Ref :- Bh. 59(20).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'C'.**

Object :—To study the effect of leguminous crops on Maize yield.

1. BASAL CONDITIONS :

(i) (a) Maize+legumes—Wheat. (b) Wheat. (c) 20 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super. (ii) (a) Clayey. (b) Refer soil analysis, Kanke. (iii) 1, 2, 3.6.1959. (iv) (a) 3 ploughings. (b) Behind the plough. (c) 8 srs./ac. (d) 2′×1′. (e) —. (v) 20 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super at sowing and 20 lb./ac. of N as A/S at earthing up. (vi) Kalimpong. (vii) Nil. (viii) 2 hoeings, 2 weedings and earthing up. (ix) 37″. (x) 15.9.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 58(42) on page 463.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) 1958—1960. (b) Yes. (c)—. (v) (a) Putida and Musheri. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1574 lb./ac. (ii) 523.3 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	1602	1698	1826	1808	738	1769

S.E./mean = 261.7 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 56(183).**

Site :- Bot. Sub-Stn., Monghyr. **Type :- 'C'.**

Object :—To find out the best spacing for Maize.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Gram. (c) Nil. (ii) (a) Clayey loam. (b) N.A. (iii) 10, 11.6.1956. (iv) (a) 3 ploughings. (b) Dibbling. (c) 8 srs./ac. (d) As per treatments. (e) N.A. (v) 20 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super at sowing and 20 lb./ac. of N as A/S at earthing up. (vi) Jaunpur (early). (vii) Unirrigated. (viii) Weeding and earthing up. (ix) 38.01″. (x) 12 to 14.9.1956.

2. TREATMENTS :

Strips in one direction :

3 row spacings : $R_1=1\frac{1}{2}'$, $R_2=2'$ and $R_3=2\frac{1}{2}'$.

Strips in orthogonal direction :

3 plant spacings : $P_1=9''$, $P_2=12''$ and $P_3=15''$.

3. DESIGN :

(i) Strip plot. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 75′×16½′. (b) 72′×15′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1956—1957. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1421 lb./ac. (ii) (a) 84.0 lb./ac. (b) 228.6 lb./ac. (c) 192.9 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	P_1	P_2	P_3	Mean
R_1	1531	1361	1428	1440
R_2	1495	1423	1462	1460
R_3	1399	1368	1326	1364
Mean	1475	1384	1405	1421

S.E. of difference of two
1. R marginal means = 34.3 lb./ac.
2. P marginal means = 93.3 lb./ac.
3. P means of the same level of R = 116.5 lb./ac.
4. R means at the same level of P = 122.1 lb./ac.

Crop :- Maize ***(Kharif).*** **Ref :- Bh. 57(166).**
Site :- Bot. Sub-Stn., Monghyr. **Type :- 'C'.**

Object :—To find out the best spacing for Maize.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) 1½ tons of town compost, 1 md. of A/S and 2½ mds of Super. (ii) (a) Clayey loam. (b) N.A. (iii) 4.7.1957. (iv) (a) 3 ploughings. (b) Dibbling. (c) 8 srs/ac. (d) As per treatments. (e) N.A. (v) 20 lb./ac. of N as A/S+40 lb./ac. of P as Super at sowing and 20 lb./ac. of N as A/S at earthing up. (vi) Jaunpur (early). (vii) Unirrigated. (viii) Twice weeding and earthing up. (ix) 17.08″. (x) 25.9.1957.

2. TREATMENTS :

Same as in expt. no. 56(183) on page 464.

3. DESIGN :

(i) Strip-plot. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 36′×24′. (b) 33′×22′. (v) 1½′×1′. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1956—1957. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 647 lb./ac. (ii) (a) 172.0 lb./ac. (b) 477.5 lb./ac. (c) 156.9 lb./ac. (iii) Main effect of R alone is significant. (iv) Av. yield of grain in lb./ac.

	P_1	P_2	P_3	Mean
R_1	802	811	594	736
R_2	753	712	415	627
R_3	559	679	497	578
Mean	705	734	502	647

S.E. of difference of two

1. R marginal means = 70.2 lb./ac.
2. P marginal means = 194.9 lb./ac.
3. P means at the same level of R = 382.4 lb./ac.
4. R means at the same level of P = 114.6 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 56(184).**

Site :- Bot. Sub-Stn., Monghyr. **Type :- 'C'.**

Object :—To study the effect of topping on the yield of Maize.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Clayey loam. (b) N.A. (iii) 25.6.1956. (iv) (a) 3 ploughings. (b) Line sowing. (c) 8 srs./ac. (d) Rows 1½′ apart. (e) N.A. (v) 100 lb./ac. of A/S+120 lb./ac. of Super at sowing and the same dose at earthing up. (vi) N.A. (vii) Unirrigated. (viii) Earthing up and weeding. (ix) 38.01″. (x) 21.9.1956.

2. TREATMENTS :

1. Control (no topping).
2. Topping after pollination.
3. Topping after 7 days of pollination.
4. Pulling out tessels after pollen is shed.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 36′×20′. (b) 32′×16′. (v) 2′×2′. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) N.A. (iii) Grain yield. (iv) (a) 1954—1956. (b) No. (c) Nil. (v) (a) Sepaya, Pusa, Sabour and Dumka. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 356 lb./ac. (ii) 116.9 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4
Av yield	315	445	299	364

S.E./mean = 47.7 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 58(7).**

Site :- Govt. Agri. Farm, Musheri. **Type :- 'C'.**

Object :—To find out a suitable legume mixture with Maize to be followed by Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Attli* (a vegetable). (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 18.7.1958. (iv) (a) 3 ploughings. (b) Behind the plough. (c) N.A. (d) Rows 2′ apart. (e) —. (v) 20 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super applied before sowing. (vi) Jaunpur (late). (vii) Unirrigated. (viii) Hoeing and earthing. (ix) 30.60″. (x) 20.10.1958.

2. TREATMENTS :

Same as in expt. no. 58(42) on page 463.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 40′×27′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain yield. (iv) (a) to (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 245 lb./ac. (ii) 100.9 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5	6
Av. yield	239	154	398	244	125	308

S.E./mean = 25.2 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 59(24).**

Site :- Govt. Agri. Farm, Musheri. **Type :- 'C'.**

Object :—To find out suitable legume mixture with maize to be followed by Wheat.

1. BASAL CONDITIONS :

(i) (a) Maize—Wheat—Maize. (b) Wheat. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 12.6.1959. (iv) (a) 3 ploughings by Bihar plough. (b) Behind the plough. (c) 8 srs./ac. (d) 2′×1′. (e) 2 to 3. (v) 20 lb./ac. of P_2O_5 as Super at sowing. (vi) Jaunpur. (vii) Unirrigated. (viii) 1 hoeing and 1 earthing. (ix) 15.95″. (x) 24, 25.9.1959.

2. TREATMENTS

Same as in expt. no. 58(42) on page 463.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) 144′×142′. (iii) 4. (iv) (a) and (b) 33′×22′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) 1959—60. (b) No. (c) Nil. (v) (a) Kanke and Putida. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1563 lb./ac. (ii) 417 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5	6
Av. yield	1882	1543	1481	1697	987	1789

S.E./mean = 209 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 57(10).**

Site :- Govt. Agri. Farm, Musheri. **Type :- 'C'.**

Object :—To find the use of *Moong* as intermediate crop in Maize and Wheat rotation.

1 BASAL CONDITIONS :

(i) (a) Maize—*Moong*—Wheat—Maize. (b) Wheat. (c) N.A. (ii) (a) Light loam soil. (b) N.A. (iii) 27.6.1957. (iv) (a) 3 ploughings. (b) Behind the plough. (c) 8 srs./ac. (d) 2½′×9″. (e) —.(v) Nil. (vi) Jaunpur (late). (vii) Unirrigated. (viii) Furrowing and earthing. (ix) 22.5″. (x) 4.10.1957.

. TREATMENTS :

1 Maize—Wheat.
2. Maize—*Kalai* (fodder)—Wheat.
3. Maize—*Kalai* (G.M.)—Wheat.
4. Maize—*Moong* (fodder)— Wheat.
5. Maize—*Moong* (G.M.)—Wheat.

3· DESIGN :

(i) R.B.D. (ii) (a) 5. (b) 168′×145′. (iii) 4. (iv) (a) 42′×29′. (b) 40′×27′. (v) 1′×1′. (vi) Yes.

4. GENERAL

(i) N.A. (ii) Nil. (iii) Grain yield. (iv) (a) 1956—1958. (b) No. (c) None. (v) to (vii) Nil.

5. RESULTS :

(i) 2006 lb./ac. (ii) 224.7 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5
Av. yield	1903	2119	1872	2191	1944

S.E./mean = 112.4 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 57(9).**

Site :- Govt. Agri. Farm, Musheri. **Type :- 'C'.**

Object :—To study the effect of different spacings on the yield of Maize

1 BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 11, 16.6.1957. (iv) (a) 3 ploughings. (b) Behind the plough. (c) 8 srs./ac. (d) As per treatments. (e) —. (v) Nil. (vi) Jaunpur (late). (vii) Unirrigated. (viii) Weeding and earthings. (ix) 18″. (x) 18.9.1957.

2. TREATMENTS :

Main-plot treatments :

3 row spacings : $R_1=1\frac{1}{2}'$, $R_2=2'$ and $R_3=2\frac{1}{2}'$.

Sub-plot treatments :

3 plant spacings : $P_1=9''$, $P_2=12''$ and $P_3=15''$.

3 DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/block ; 3 sub-plots/main-plot. (b) N A. (iii) 4. (iv) (a) N.A. (b) 52′×21′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Nil. (iii) Grain yield. (iv) (a) to (c) No. (v) (a) All Govt. Farms. (b) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 1868 lb./ac. (ii) (a) 301.1 lb./ac. (b) 319.7 lb./ac (iii) Main effect of P is highly significant. (iv) Av. yield of grain in lb./ac.

	P_1	P_2	P_3	Mean
R_1	1944	2108	1594	1882
R_2	2386	1800	1738	1975
R_3	2006	1687	1553	1748
Mean	2112	1865	1628	1868

S.E of difference of two.

1. R marginal means = 122.6 lb./ac.
2. P marginal means = 130.4 lb./ac.
3. P means at the same level of R = 261.0 lb./ac.
4. R means at the same level of P = 137.6 lb./ac.

Crop :- Maize. **Ref :- Bh. 55(103).**

Site :- Govt. Agri. Farm, Musheri. **Type :- 'C'.**

Object :—To study the effect of spacing on Maize .

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Potato. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 11.6.1955. (iv) (a) Tractor ploughing twice, ploughing with Bihar plough twice, *desi* plough once and cultivator. (b) N.A. (c) 6½ srs./ac. (d) N.A. (e) 2 to 3. (v) Town compost broadcast at 10 ton./ac. in May and June. (vi) Jaunpur (late). (vii) Unirrigated. (viii) Weeding and earthing up once. (ix) 49.42″. (x) 20.9.1955.

2. TREATMENTS :

Main-plot treatments :

2 row spacings : $R_1=2'$ and $R_2=2.5'$.

Sub-plot treatments :

2 plant spacings : $P_1=9''$ and $P_2=12''$.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication ; sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) 72′×15′. (b) 70½′×13½′. (v) 9″×9″. (vi) Yes.

4. GENERAL :

(i) Fair ; no lodging. (ii) Nil. (iii) Yield of grain. (iv) (a) 1955—contd. (b) and (c) No. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2001 lb./ac. ′) (a) 294.3 lb./ac. (b) 455.5 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in b ac..

	P_1	P_2	Mean
R_1	2118	1671	1895
R_2	2212	2001	2106
Mean	2165	1836	2001

S.E. of difference of two.

1. R marginal means = 120.2 lb./ac.
2. P marginal means = 186.0 lb./ac.
3. P means at the same level of R = 263.0 lb./ac.
4. R means at the same level of P = 221.4 lb./ac.

———

Crop :- Maize *(Kharif)*. **Ref :- Bh. 57(13).**

Site :- Govt. Agri. Farm, Musheri. **Type :- 'C'.**

Object :—To find the best method of sowing Maize.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Wheat. (c) F.Y.M. and potash at 40 lb./ac. of N each. (ii) (a) Sandy loam. (b) N.A. (iii) 1.12.1956. (iv) (a) 3 ploughings. (b) As per treatments. (c) 8 srs/ac. (d) 2½′×9″. (e) N.A. (v) Nil. (vi) Jaunpur (late). (vii) Unirrigated. (viii) Hoeing and furrowing. (ix) 1.6″. (x) 6.4.1957.

2. TREATMENTS :

2 methods of sowing : M_1=Dibbling and M_2=Behind the plough.

3. DESIGN :

(i) R.B.D. (ii) (a) 2. (b) N.A. (iii) 7. (iv) (a) N.A. (b) 26′×20′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) No. (iii) Grain yield (iv) and (v) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 1550 lb./ac. (ii) 204.0 lb./ac. (iii) Treatment difference is highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2
Av. yield	1390	1710

S.E./mean = 77.1 lb./ac.

Crop :- Maize ***(Kharif).*** **Ref :- Bh. 54(133).**

Site :- Govt. Agri. Farm, Neterhat. **Type :- 'C'.**

Object :—To study the effect of topping on yield of Maize.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Red laterite. (b) N.A. (iii) 15.6.1954. (iv) (a) 4 ploughings. (b) Behind the plough. (c) 8 srs /ac. (d) 2′×1′. (e) 1. (v) 100 md./ac. of F.Y.M. (vi) Kalimpong. (vii) Unirrigated. (viii) Nil. (ix) 28.00″. (x) 18.9.1954.

2. TREATMENTS :

1. No topping of tessel.
2. Topping before pollination.
3. Topping 7 days after pollination.
4. Removal of tessel just after emergence.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) 15′×8′. (b) 13′×6′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) to (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 1032 lb./ac. (ii) 282.6 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4
Av. yield	1155	1000	953	1019

S.E./mean = 141.3 lb./ac.

Crop :- Maize ***(Kharif).*** **Ref :- Bh. 56(152).**

Site :- Govt. Agri. Farm, Neterhat. **Type :- 'C'.**

Object :—To find out the best spacing for Maize.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Red laterite. (b) N.A. (iii) 21.6.1956. (iv) (a) 3 ploughings. (b) Behind the plough. (c) N.A. (d) As per treatments. (e) —. (v) 20 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super at the time of sowing and 20 lb./ac. of N as A/S at earthing up. (vi) Kalimpong. (vii) Unirrigated. (viii) N.A. (ix) 51.90″. (x) 20.10.1956.

2. TREATMENTS :

Strips in one direction :

3 row spacings : $R_1=1\frac{1}{2}'$, $R_2=2'$ and $R_3=2\frac{1}{2}'$.

Strips in orthogonal direction :

3 plant spacings : $P_1=9''$, $P_2=12''$ and $P_3=15''$.

3. DESIGN :

(i) Strip-plot. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 68′×21′. (b) 64′×17′. (v) 2′×2′. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Nil. (iii) Number of cobs, grain and straw yield. (iv) (a) 1956—contd. (b) No. (c) Nil. (v) (a) Kanke. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 554 lb./ac. (ii) (a) 249.6 lb./ac. (b) 271.9 lb./ac. (c) 268.0 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb ./ac.

	R_1	R_2	R_3	Mean
P_1	650	458	519	542
P_2	617	558	681	619
P_3	429	483	591	501
Mean	565	500	597	554

S.E. of difference of two

1. R marginal means	=	101.9 lb./ac.
2. P marginal means	=	111.0 lb./ac.
3. P means at the same level of R	=	190.4 lb./ac.
4. R means at the same level of P	=	182.3 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 57(116).**

Site :- Govt. Agri. Farm, Neterhat. **Type :- 'C'.**

Object :—To find the best spacing for Maize.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Maize. (b) N.A. (ii) (a) Red laterite. (b) N.A. (iii) 2.7.1957. (iv) (a) 4 ploughings by *desi* plough. (b) Behind the plough. (c) 15 srs./ac. (d) As per treatments. (e) 1. (v) 20 lb./ac. of N as A/S+ 40 lb./ac. of P_2O_5/ac. as Super at sowing time in furrows ; 20 lb./ac. of N as A/S as top dressing at earthing time. (vi) Kalimpong. (vii) Unirrigated. (viii) Earthing and hoeing once. (ix) 48.36". (x) 9.11.1957.

2. TREATMENTS :

Same as in expt. no. 56(152) on page 470.

3. DESIGN :

(i) Strip-plot. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 66'×19'. (b) 64'×17'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Cob weight and grain yield. (iv) (a) 1956—1957. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 458 lb./ac. (ii) (a) 189.4 lb./ac. (b) 160.8 lb./ac. (c) 210.5 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	P_1	P_2	P_3	Mean
R_1	573	427	378	459
R_2	623	575	402	533
R_3	475	369	298	381
Mean	557	457	359	458

S.E. of difference of two

1. R marginal means	=	77.3 lb./ac.
2. P marginal means	=	65.6 lb./ac.
3. P means at the same level of R	=	144.0 lb./ac.
4. R means at the same level of P	=	138.1 lb./ac.

Crop :- Maize *(Kharif).* **Ref :- Bh. 57(169).**

Site :- Agri. Res. Instt., Patna. **Type :- 'C'.**

Object :—To study the effect of ploughing with different types of plough on Maize.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Heavy clay. (b) Refer soil analysis, Patna. (iii) 30.6.1957. (iv) (a) As per treatment. (b) Line sowing. (c) 8 srs./ac. (d) Rows 1′ apart. (e) N.A. (v) 40 lb./ac. of N as A/S+30 lb./ac. of P_2O_5 as Super at sowing. (vi) NP—52. (vii) Unirrigated. (viii) 1 weeding and hoeing. (ix) 26.33″. (x) 21.9.1957.

2. TREATMENTS :

6 types of ploughs : T_1=Vijay plough, T_2=U.P. No. 2 plough, T_3=Peepul plough type VIII, T_4=Wah wah plough, T_5=Peepul plough type M—1 and T_6=Bihar senior plough.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 70′×30′. (v) N.A. (vi) Yes.

4 GENERAL :

(i) Good. (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1956—1957. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 529 lb./ac. (ii) 150.6 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	570	475	418	631	530	550

S-E./mean = 75.3 lb./ac.

Crop :- Maize *(Kharif).* **Ref :- 56(147).**

Site :- Govt. Agri. Farm, Piprakothi. **Type :- 'C'.**

Object :—To find out the best spacing for Maize.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Wheat. (c) 5 md./ac. of castor cake+3 md./ac. of Super. (ii) (a) Sandy loam. (b) N.A. (iii) 11.6.1956 to 13.6.1956. (iv) (a) 5 ploughings by Bihar senior plough. (b) N.A. (c) 8 srs./ac. (d) As per treatments. (e) 2. (v) Nil. (vi) Jaunpur. (vii) Unirrigated. (viii) 2 weedings by *Khurpi*, 2 interculturing by cultivator and 1 earthing by ridger. (ix) N.A. (x) 23.9.1956.

2. TREATMENTS :

Same as in expt. no. 56(152) on page 470.

3. DESIGN :

(i) Strip-plot. (ii) (a) 9. (b) 127′6″×66′. (iii) 4. (iv) (a) 21′×63′5″. (b) 18′×60.5′. (v) 1½′×1½′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Slight attack of stem borer—affected plants removed. (iii) Tiller count, no. of cobs and maize yield. (iv) (a) 1956—1957. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 563 lb./ac. (ii) (a) 268.7 lb./ac. (b) 270.5 lb./ac. (c) 131.7 lb./ac. (iii) Interaction P×R alone is significant. (iv) Av. yield of grain in lb./ac.

	R_1	R_2	R_4	Mean
P_1	413	420	682	505
P_2	676	648	482	602
P_3	585	583	580	583
Mean	558	550	581	563

S.E. of difference of two
1. R marginal means = 109.7 lb./ac.
2. P marginal means = 110.4 lb./ac.
3. P means at the same level of R = 133.5 lb./ac.
4. R means at the same level of P = 134.1 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 57(147).**

Site :- Govt. Agri. Farm, Piprakoth . **Type :- 'C'.**

Object :—To find out the best spacing for Maize.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Wheat. (c) 7 md./ac. of castor cake+1$\frac{1}{2}$ md./ac. of Super (ii) (a) Sandy loam. (b) N.A. (iii) 14.6.1957. (iv) (a) 1 ploughing by Bihar plough and 1 by disc plough. (b) Line sowing. (c) 8 srs./ac. (d) As per treatments. (e) 1. (v) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (vi) Jaunpur. (vii) Unirrigated. (viii) 1 weeding by *khurpi* and 1 interculturing by cultivator. (ix) N.A. (x) 28.9.1957.

2. TREATMENTS :

Same as in expt. no. 56(152) on page 470.

3. DESIGN :

(i) Strip-plot. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 42′4″×30′. (b) 40′4″×27′. (v) 1′×1$\frac{1}{2}$′. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) Infestation of stem borers—affected parts removed. (iii) Grain yield. (iv) (a) 1956—1957. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 587 lb./ac. (ii) (a) 176.7 lb.ac. (b) 162.7 lb./ac. (c) 216.5 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	R_1	R_2	R_3	Mean
P_1	574	854	615	681
P_2	615	481	514	537
P_3	520	511	600	544
Mean	570	616	576	587

S.E. of difference of two
1. R marginal means = 72.1 lb./ac.
2. P marginal means = 66.4 lb./ac.
3. P means at the same level of R = 144.3 lb./ac.
4. R means at the same level of P = 141.5 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 59(41).**
Site :- Govt. Agri. Farm, Piprakothi. **Type :- 'C'.**

Object—To find out a suitable legume mixture for Maize to be followed by Wheat.

1. BASAL CONDITIONS :

(i) (a) and (b) As per treatments. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 11.6.1959. (iv) (a) 2 ploughings by Bihar plough and one by cultivator followed by planking. (b) Behind the plough. (c) 8 srs./ac. (d) 2′×1′. (e) —. (v) Nil. (vi) Jaunpur. (vii) Unirrigated. (viii) 2 weedings by *khurpi*, 4 interculturings by cultivator and earthing by ridger. (ix) 22.10″. (x) 2.10.1959.

2. TREATMENTS :

1. Maize+Groundnut.
2. Maize+Cowpea.
3 Maize+*Kalai*.
4. Maize+*Moong*.
5. Maize+*Dhaincha*.
6. Maize alone.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 24′×35′. (b) 22′×33′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Attack of leaf roller. Effected leaves were removed. (iii) No. of cobs/plant and grain yield. (iv) (a) 1958—1959. (b) No. (c) Nil. (v) (a) N.A. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 2495 lb./ac. (ii) 796.1 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5	6
Av. yield	2553	2742	2715	2090	1982	2889

S.E./mean = 398.0 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 57(145).**

Site :- Govt. Agri. Farm, Piprakothi. **Type :- 'C'.**

Object :—To find out a suitable legume mixture for Maize.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 5 md./ac. of castorcake+2½ md./ac. of Super. (ii) (a) Sandy loam. (b) N.A. (iii) 7.7.1957. (iv) 1 ploughing by tractor disc plough and 1 by Bihar plough. (b) Line sowing. (c) 8 srs./ac. (d) Rows 1′ apart. (e) 1. (v) Nil. (vi) Jaunpur. (vii) Unirrigated. (viii) 1 weeding by *Khurpi* and 2 interculturings by cultivator. (ix) N.A. (x) 7.10.1957.

2. TREATMENTS :

1. Maize+Groundnut.
2. Maize+*Kalai*.
3. Maize+*Moong*.
4. Maize+*Dhaincha*.
5. Maize alone.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 42′4″×30′. (b) 40′4″×27′. (v) 1′×1½′, (vi) Yes.

4. GENERAL :

(i) Good. (ii) Stem borers observed—affected plants were removed. (iii) Grain yield. (iv) (a) 1957—N.A. (b) No. c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 1581 lb./ac. (ii) 625.3 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5
Av. yield	1601	1727	1172	1557	1848

S.E./mean = 312.6 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 57(146).**
Site :- Govt. Agri. Farm, Piprakothi. **Type :- 'C'.**

Object :—To study the use of Moong and Kalai as intermediate crops in Maize—Wheat rotation.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Wheat. (c) 7 md./ac. of castor cake+1½ md./ac. of Super. (ii) (a) Sandy loam. (b) N.A. (iii) 17.6.1957. (iv) (a) 1 ploughing by tractor, 1 by Bihar plough, followed by beaming. (b) Behind the plough. (c) 8 srs./ac. (d) Rows 1′ apart. (e) N.A. (v) Nil. (vi) Jaunpur. (vii) Unirrigated. (viii) 1 weeding by *khurpi*, 2 intercultures by cultivator. (ix) N.A. (x) 27.9.1957.

2. TREATMENTS :

1. Maize alone.
2. Maize+*Kalai* (fodder).
3. Maize+*Kalai* (G.M.).
4. Maize+*Maong* (fodder).
5. Maize+*Moong* (G.M.).

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 42′4″×30′. (b) 40′4″×27′. (v) 1′×1½′. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Stem borer attack—affected plants were removed. (iii) Grain yield. (iv) (a) 1957—1958. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 678 lb./ac. (ii) 196.8 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5
Av. yield	566	589	733	657	848

S.E./mean = 98.4 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 58(98).**
Site :- Govt. Agri. Farm, Piprakothi. **Type :- 'C'.**

Object :—To find the use of Moong and Kalai as intermediate crops in Maize—Wheat rotation.

1. BASAL CONDITIONS :

(i) (a) Maize—Wheat. (b) Wheat. (c) 7½ mds./ac. of castor cake+3 md./ac. of Super, 1½ md./ac. of A/S. (ii) (a) Sandy loam. (b) N.A. (iii) 24.6.1958. (iv) (a) 3 ploughings by Bihar plough and 2 by country plough followed by beaming. (b) Behind the plough. (c) 8 srs./ac. (d) 2′×1′. (e) N.A. (v) Nil. (vi) Jaunpur. (vii) Unirrigated. (viii) 2 weedings by *khurpi*, 4 times interculturings with cultivator and earthing by ridger. (ix) 49.97″. (x) 24.9.1958.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 57(146) above.

5. RESULTS :

(i) 738 lb./ac. (ii) 395.6 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5
Av. yield	1042	989	780	565	314

S.E./mean = 197.8 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 57(197).**

Site :- Distt. Agri. Farm, Purnea. **Type :- 'C'.**

Object: —To find the use of Moong and Kalai as intermediate crops in Maize—Wheat rotation.

1. BASAL CONDITIONS :

(i) (a) Maize—Wheat—Maize. (b) Wheat. (c) N.A. (ii) (a) Sandy loam (b) N.A. (iii) 16.6.1957. (iv) (a) 2 ploughings by country plough. (b) In rows. (c) 8 srs./ac. (d) 2'×8". (e) 1. (v) 40 lb./ac. of P_2O_5 as Super+20 lb./ac. of N as A/S. (vi) Jaunpur. (vii) Unirrigated. (viii) One weeding. (ix) 30.65". (x) 8.9.1957.

2. TREATMENTS :

Same as in expt. no. 57(146) on page 475.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 35½'×35½'. (b) 33'×33'. (v) 1¼'×1¼'. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) to (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 1517 lb./ac. (ii) 444.3 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5
Av. yield	1450	1419	1584	1594	1538

S.E./mean = 222.2 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 58(186).**

Site :- Distt. Agri. Farm, Purnea. **Type :- 'C'.**

Object :—To find out the use of Moong and Kalai as intermediate crops in Maize—Wheat rotation.

1. BASAL CONDITIONS :

(i) (a) Maize—Wheat—Maize. (b) Wheat. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 8.6.1958. (iv) (a) N.A. (b) Behind the plough. (c) to (e) N.A. (v) and (vi) N.A. (vii) Unirrigated. (viii) 1 earthing and weeding. (ix) 48.46". (x) 2.9.1958.

2. TREATMENTS :

Same as in expt. no. 57(146) on page 475.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 42⅓'×29'. (b) 40⅓'×27'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Poor germination. (ii) Heavy attack of stem-borer—follidol sprayed. (iii) Grain yield. (iv) (a) to (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 602 lb./ac. (ii) 264.2 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac

Treatment	1	2	3	4	5
Av. yield	434	566	581	617	812

S.E./mean = 132.1 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 59(120).**

Site :- Agri. Res. Instt., Pusa. **Type :- 'C'.**

Object :—To find out a suitable legume mixture with Maize to be followed by Wheat.

1. BASAL CONDITIONS :

(i) (a) As per treatments. (b) Wheat. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 17.6.1959 (iv) (a) 2 ploughings by mould board plough and 1 by *desi* plough. (b) Behind the plough. (c) 8 srs./ac. (d) 2′×9″. (e) 1. (v) 40 lb./ac. of N as A/S and 40 lb./ac. of P_2O_5 as Super. (vi) Jaunpur (late). (vii) Nil. (viii) 2 weedings and one interculturing. (ix) 15.50″. (x) 3.10.1959.

2. TREATMENTS :

6 treatments : T_1=Maize+Groundnut, T_2=Maize+Cowpea, T_3=Maize+*Kalai*, T_4=Maize+*Moong*, T_5=Maize+*Dhaincha* and T_6=Maize alone.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 33′×22′. (b) 31′×20′4″. (v) 12″×10″. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Mild attack of stem-borer—no control measures were taken. (iii) Grain and straw yield. (iv) (a) to (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 444 lb./ac. (ii) 193.0 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	481	607	410	616	218	334

S.E./mean = 96.5 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 57(177).**

Site :- Agri. Res. Instt., Pusa. **Type :- 'C'.**

Object :—To find the use of Moong and Kalai as intermediate crops for fodder and green manuring in Maize and Wheat rotation.

1. BASAL CONDITIONS :

(i) (a) Maize, Moong, Kalai—Wheat. (b) Wheat. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) Maize 23/24.6 1957. Kalai and moong on 3.8.1957. (iv) (a) 2 ploughings by mould board plough and 1 operation by cultivator. (b) Behind the plough. (c) 8 srs./ac. (d) Rows 2′ apart. (e) —. (v) 40 lb./ac. of N as A/S+ 40 lb./ac. of P_2O_5 as Super. (vi) Jaunpur. (vii) Unirrigated. (viii) 2 weedings, 1 interculture and 1 earthing up. (ix) 26 65″. (x) 5.10.1957.

2. TREATMENTS :

Same as in expt. no. 57(146) on page 475.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) and (b) 33′×33′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Mild attack of stem-borer—no control measures taken. (iii) Grain yield. (iv) (a) 1957. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) Due to heavy rains *moong* did not germinate. (vii) Nil.

5 RESULTS :

(i) 419 lb./ac. (ii) 102.2 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5
Av. yield	458	396	370	411	458

S.E./mean = 51.1 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 57(179).**

Site :- Agri. Res. Instt., Pusa. **Type :- 'C'.**

Object :—To find a suitable legume mixture with maize followed by Wheat.

1. BASAL CONDITIONS :

(i) (a) Wheat—Maize+Legumes—Wheat. (b) Wheat. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 26 6.1957. (iv) (a) 2 ploughings by mould board plough and 1 by cultivator. (b) Behind the plough. (c) 8 srs./ac. (d) 2′×9″. (e) 1 (v) 40 lb./ac. of N as A/S+40 lb./ac. P_2O_5 as Super. (vi) Jaunpur (late). (vii) Unirrigated. (viii) 2 weedings, 1 interculture and earthing up. (ix) 26.65″. (x) 7, 8.10.1962.

2. TREATMENTS :

5 intermediate crops with maize : C_0=Nil (control), C_1=Groundnut, C_2=*Kalai*, C_3=*Moong* and C_4=*Dhaincha.*

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) and (b) 40′3″×27′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Mild attack of stem-borer. (iii) Grain yield. (iv) (a) 1957—N.A. (b) No (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 508 lb./ac. (ii) 150.6 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	C_0	C_1	C_2	C_3	C_4
Av. yield	509	545	483	509	494

S.E./mean = 75.3 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 56(165).**

Site :- Agri. Res. Instt., Pusa. **Type :- 'C'.**

Object :—To find the optimum relationship between spacing and the number of plants per hill in checker type sowing.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Gram. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 11,12.6.1956. (iv) (a) 2 ploughings. (b) Dibbling. (c) 8 srs./ac. (d) and (e) As per treatments. (v) 200 mds/ac. of F.Y.M. (vi) Kalimpong. (vii) Unirrigated. (viii) Nil. (ix) 45.48″. (x) 4, 5.10.1956.

2. TREATMENTS :

All combinations of (1) and (2)
(1) Number of plants/hill : H_1=2, H_2=3 and H_3=4.
(2) 2 plant spacings : S_1=2′ and S_2=3′.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) 42′×24′. (b) 36′×18′. (v) 3′×3′. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Attack of stem-borers. (iii) Grain yield. (iv) (a) to (c) No. (v) (a) Sepaya. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1620 lb./ac. (ii) 411.0 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	H_1	H_2	H_3	Mean
S_1	1852	1878	1644	1791
S_2	1191	1572	1584	1449
Mean	1522	1725	1614	1620

S.E. of marginal mean of H = 118.6 lb./ac.
S.E. of marginal mean of S = 96.9 lb./ac.
S.E. of body of table = 167.8 lb./ac.

Crop :- Maize ***(Kharif)*****.** **Ref :- Bh. 54(128).**

Site :- Agri. Res. Instt,. Pusa. **Type :- 'C'.**

Object :—To find out the optimum relationship between spacing and number of plants/hill in checker type sowing.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Sugarcane. (c) 60 lb./ac. of N as A/S+75 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy loam. (b) N.A. (iii) 20, 21.6.1954. (iv) (a) 2 ploughings. . (b) Dibbling. (c) 8 srs./ac. (d) and (e) As per treatments. (v) 40 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super. (vi) Kalimpong. (vii) Unirrigated. (viii) Nil. (ix) 42.44". (x) 29.9.1954.

2. TREATMENTS :

Main-plot treatments :

4 row spacings : $R_1=2'$, $R_2=3'$, $R_3=4'$ and $R_4=5'$.

Sub-plot treatments :

Number of plants/hill : $H_1=1$, $H_2=2$, $H_3=3$, $H_4=4$ and $H_5=5$.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/replication ; 5 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 12'×20'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Attack of white ants and stem-borers. Aldrin was sprayed. (iii) Grain yield. (iv) (a) to (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 1270 lb./ac. (ii) (a) 618.8 lb./ac. (b) 508.2 lb./ac. (iii) None of the effects is significant. (iv) Av yield of grain in lb./ac.

	R_1	R_2	R_3	R_4	Mean
H_1	1672	883	611	459	906
H_2	1688	1466	937	548	1160
H_3	1696	1517	933	844	1248
H_4	2135	1602	1252	1112	1526
H_5	2135	1999	1093	809	1509
Mean	1865	1493	965	754	1270

S.E. of difference of two
1. R marginal means = 159.8 lb./ac.
2. H marginal means = 146.7 lb./ac.
3. H means at the same level of R = 293.4 lb./ac.
4. R means at the same level of H = 307.2 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 54(132).**

Site :- Agri. Res. Instt., Pusa. **Type :- 'C'.**

Object :—To find out the optimum spacing between rows and plants for Maize.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Sugarcane. (c) 60 lb./ac. of N as A/S+75 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy loam. (b) N.A. (iii) 17, 18.6.1954. (iv) (a) 2 ploughings. (b) Behind the plough. (c) 8 srs./ac. (d) As per treatment. (e) 1. (v) 40 lb /ac. of N as A/S+20 lb./ac. of P_2O_5 as Super. (vi) Kalimpong. (vii) Unirrigated. (viii) Nil. (ix) 42.44". (x) 27.9.1954.

2. TREATMENTS :

Strips in one direction :

3 row spacings : R_1=18", R_2=24" and R_3=30".

Strips in orthogonal direction :

3 plant spacings : P_1=9", P_2=12" and P_3=15".

3. DESIGN :

(i) Strip-plot. (ii) (a) 9. (b) N.A. (iii) 6. (iv) (a) 14'×32'. (b) 12'×30'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Attack of white ants and stem borers—Aldrin was sprayed. (iii) Grain yield. (iv) (a) to (c) No. (v) (a) Sepaya. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 780 lb./ac. (ii) (a) 279.6 lb./ac. (b) 272.8 lb./ac. (c) [122.9 lb.ac. (iii) Effect of R is significant. (iv) Av. yield of grain in lb./ac.

	R_1	R_2	R_3	Mean
P_1	589	703	928	740
P_2	594	731	947	757
P_3	755	874	900	843
Mean	646	769	925	780

S.E. of difference of two
1. R marginal means = 93.2 lb./ac.
2. P marginal means = 90.9 lb./ac.
3. P means at the same level of R = 109.7 lb./ac.
4. R means at the same level of P = 107.8 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 54(130).**

Site :- Agri. Res. Instt., Pusa. **Type :- 'C'.**

Object :—To study the effect of topping on yield of Maize.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 18.6.1954. (iv) (a) 2 ploughings. (b) Behind the plough. (c) 8 srs./ac. (d) 2'×1'. (e) 1. (v) 40 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super. (vi) Kalimpong. (vii) Unirrigated. (viii) Nil. (ix) 42.41". (x) 24.9.1954.

2. TREATMENTS .

1. No topping.
2. Topping before pollination.
3. Topping soon after pollination.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) 20′×10′. (b) 16′×6′. (v) 2′×2′. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Attack of white ants and stem borers—Aldrin sprayed. (iii) Grain yield. (iv) (a) to (c) Nil. (v) (a) Monghyr. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1235 lb./ac. (ii) 509.2 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3
Av. yield	1186	1041	1478

S.E./mean = 207.9 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 56(167).**

Site :- Agri. Res. Instt., Pusa. **Type :- 'C'.**

Object :—To study the effect of topping on yield of Maize.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 8.6.1956. (iv) (a) 2 ploughings. (b) Behind the plough. (c) 8 srs./ac. (d) 2′×1′. (e) 1. (v) 200 md./ac. of F.Y.M. as A/S+20 lb./ac. of P_2O_5 as Super. (vi) Kalimpong. (vii) Unirrigated. (viii) Nil. (ix) 45.48″. (x) 1.10.1956.

2. TREATMENTS :

1. No topping.
2. Topping before pollination.
3. Topping 7 days after pollination.
4. Pulling out tessel soon after pollen is shed.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 36′×20′. (b) 32′×16′. (v) 2′×2′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) 1955—N.A. (b) No. (c) N.A. (v) (a) Sepaya, Sabour and Monghyr. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1745 lb./ac. (ii) 319.7 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4
Av. yield	1783	1783	1780	1634

S.E./mean = 130.5 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 56(168).**

Site :- Distt. Agri. Farm, Putida. **Type :- 'C'.**

Object :—To find out the best spacing for Maize.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Rahar*. (c) About 20 lb./ac. of P_2O_5 as Super. (ii) (a) Clayey loam. (b) N.A. (iii) 16, 17.6.1956. (iv) (a) 4 ploughings. (b) Furrow sowing. (c) 8 srs./ac. (d) As per treatments. (e) N.A. (v) 20 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super at sowing and 20 lb./ac. of N as A/S at earthing up. (vi) Jaunpur (early). (vii) Unirrigated. (viii) Earthing up. (ix) 30.55". (x) 13 to 18.9.1956.

2. TREATMENTS :

Same as in expt. no. 54(132) on page 480.

3. DESIGN :

(i) Strip-plot. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 32′×26′. (b) 30′×24′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Attack of shoot borer. (iii) Grain and straw yield. (iv) (a) 1956–1957. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1442 lb./ac. (ii) (a) 317.5 lb./ac. (b) 555.6 lb./ac. (c) 142.6 lb./ac. (iii) Interaction R×P alone is significant. (iv) Av. yield of grain in lb./ac.

	R_1	R_2	R_3	Mean
P_1	1458	1289	1552	1433
P_2	[illegible]	1468	1386	1447
P_3	1635	1443	1260	1446
Mean	1527	1400	1399	1442

S.E. of difference of two
1. R marginal means = 129.6 lb./ac.
2. P marginal means = 226.8 lb./ac.
3. R means at the same level of P = 153.6 lb./ac.
4. P means at the same level of R = 241.3 lb./ac.

Crop :- Maize. **Ref :- Bh. 55(55).**
Site :- Distt. Agri. Farm, Putida. **Type :- 'C'.**

Object :—To find suitable legumes with Maize to be followed by Wheat.

1. BASAL CONDITIONS :

(i) (a) and (b) As per treatments. (c) Compost at 200 md./ac.+A/S and Super each at 1½ md./ac. (ii) (a) Clayey loam. (b) N.A. (iii) 29.6.1955. (iv) (a) 5 ploughings by *desi* plough. (b) Sown behind the plough. (c) N.A. (d) 2′×1′. (e) N.A. (v) Nil. (vi) Jaunpur (late). (vii) Unirrigated. (viii) 1 thinning, 1 weeding and earthing up. (ix) 25.53". (x) 19 to 21.9.1955.

2. TREATMENTS:

1. Maize alone.
2. Maize+*Kalai* (G.M.).
3. Maize+*Kalai* (Fodder).
4. Maize+*Moong* (G.M.).
5. Maize+*Moong* (Fodder).

3. DESIGN :

(i) L. Sq. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) 30′×10′. (b) 28′×8′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Good ; no lodging. (ii) Nil. (iii) Length of earhead ; number and weight of cobs ; grain and straw yield. (iv) (a) 1955—1958 (modified in 1957). (b) No. (c) Nil. (v) (a) Neterhat and Kanke. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 2302 lb./ac. (ii) 438.9 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5
Av. yield	1935	2140	2455	2530	2450

S.E./mean = 196.2 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 57(130).**

Site :- Distt. Agri. Farm, Putida. **Type :- 'C'.**

Object :—To find suitable legumes with Maize to be followed by Wheat.

1. BASAL CONDITIONS :

(i) (a) Maize+Legumes—Wheat. (b) Wheat. (c) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (ii) (a) Clayey loam. (b) N.A. (iii) 1.7.1957. (iv) (a) 4 ploughings. (b) Line sowing. (c) 8 srs./ac. (d) 2′×1′. (e) N.A. (v) 20 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super at sowidg and 20 lb./ac. of N as A/S at earthing up. (vi) Kalimpong (late). (vii) Unirrigated. (viii) Hoeing, weeding and earthing up. (ix) 25.07″. (x) 3.10.1957.

2. TREATMENTS :

Same as in expt. no. 55(55) on page 482.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 34′×12′. (b) 32′×10′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1955—1958. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 621 lb./ac. (ii) 161.8 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5
Av. yield	643	459	678	625	699

S.E./mean = 80.9 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 58(120).**

Site :- Distt. Agri. Farm, Putida. **Type :- 'C'.**

Object: —To find suitable legumes with Maize to be followed by Wheat.

1. BASAL CONDITIONS :

(i) (a) Maize+Legumes—Wheat. (b) Wheat. (c) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (ii) (a) Clayey loam. (b) N.A. (iii) 30.6.1958. (iv) (a) 4 ploughings. (b) Line sowing. (c) 8 srs./ac. (d) 2′×1′. (e) N.A. (v) 20 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super at sowing and 20 lb./ac. of N as A/S at earthing up. (vi) Jaunpur. (vii) Unirrigated. (viii) Hoeing and weeding. (ix) 23.72″. (x) 1.10.1958.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 57(130) above.

5. RESULTS :

(i) 2516 lb./ac. (ii) 752.4 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb /ac.

Treatment	1	2	3	4	5
Av. yield	2273	2430	2736	2666	2474

S.E./mean = 376.2 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 58(124).**

Site :- Distt. Agri. Farm, Putida. **Type :- 'C'.**

Object :—To find suitable legume mixture for Maize.

1. BASAL CONDITIONS :

(i) (a) Maize+Legumes—Wheat. (b) Wheat. (c) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (ii) (a) Clayey loam. (b) N.A. (iii) 26.6.1958. (iv) (a) 2 ploughings. (b) Line sowing. (c) 8 srs./ac. (d) 2′×1′. (e) N.A. (v) 20 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super at sowing and 20 lb./ac. of N as A/S at earthing up. (vi) Kalimpong. (vii) Unirrigated. (viii) 1 hoeing and 1 weeding. (ix) 23.72″. (x) 27.9.1958.

2. TREATMENTS :

1. Maize+Groundnut.
2. Maize+Cowpea.
3. Maize+*Kalai.*
4. Maize+*Moong.*
5. Maize+*Dhaincha.*
6. Maize alone.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 42′×13′. (b) 40′×11′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1957—1959. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1892 lb./ac. (ii) 641.8 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac

Treatment	1	2	3	4	5	6
Av. yield	2016	1818	1604	1720	1785	2411

S.E./mean = 320.9 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 59(59).**

Site :- Distt. Agri. Farm, Putida. **Type :- 'C'.**

Object :—To find suitable legume mixture for Maize crop.

1. BASAL CONDITIONS :

(i) Maize+Legumes—Wheat. (b) Wheat. (c) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (ii) (a) Clayey loam. (b) N.A. (iii) 7.6.1959. (iv) (a) 3 ploughings. (b) Behind the plough. (c) 8 srs./ac. (d) 2′×1′. (e) —. (v) 20 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super at sowing and 20 lb./ac. of N as A/S at earthing up. (vi) Kalimpong. (vii) Unirrigated. (viii) 1 hoeing and 1 weeding. (ix) 32.37″. (x) 30.8.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 58(124) above.

4. GENERAL :

(i) Not satisfactory. (ii) N.A. (iii) Grain and straw yield. (iv) 1957—1959. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) Excessive rains. (vii) Nil.

5. RESULTS :

(i) 236 lb./ac. (ii) 97.1 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5	6
Av. yield	248	121	363	273	183	226

S.E./mean = 48.6 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 56(82).**

Site : Agri. Res. Instt., Sabour. **Type :- 'C'.**

Object :—To find out the best spacing for Maize.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 9, 10.6 1956. (iv) 3 ploughings by *desi* plough. (b) Opening furrow with hand hoe and putting seed. (c) 8 srs./ac. (d) As per treatments (e) 2. (v) 20 lb./ac. of N as A/S on the day of sowing, 20 lb./ac. of N at the time of earthing. (vi) Jaunpur (medium). (vii) Unirrigated. (viii) Hoeing, weeding and earthing. (ix) 35.50″. (x) 13, 14.9.1960.

2. TREATMENTS :

Main-plot treatments :
3 row spacings : $R_1=18''$, $R_2=24''$ and $R_3=30''$.
Sub-plot treatments :
3 plant spacings : $P_1=9''$, $P_2=12''$ and $P_3=15''$.

3. DESIGN :

(i) Split-plot. (ii) (a) 3 main plots/block ; 3 sub-plots/main-plot. (b) $105'\times 102'$. (iii) 4. (iv) $33'\times 32'$. (b) $30'\times 30'$. (v) $1\frac{1}{2}'\times 1'$. (vi) Yes.

4. GENERAL .

(i) Good. (ii) Nil. (iii) No. of cobs per plant, grain and straw yield. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) (a) Purnea, Monghyr. Dumka, Sepaya and Musheri. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1318 lb./ac. (ii) (a) 532.2 lb./ac. (b) 591.4 lb./ac. (iii) Effect of R is highly significant and effect of P significant. (iv) Av. yield of grain in lb./ac.

	R_1	R_2	R_3	Mean
P_1	1258	1602	948	1269
P_2	1304	1859	946	1370
P_3	1312	1684	948	1315
Mean	1291	1715	947	1318

S.E. of difference of two
1. R marginal means = 217.3 lb./ac.
2. P marginal means = 241.4 lb./ac.
3. P means at the same level of R = 418.2 lb./ac.
4. R means at the same level of P = 404.7 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 58(154).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'C'.**

Object :—To find out a suitable legume mixture with Maize to be followed by Wheat.

1. BASAL CONDITIONS :

(i) (a) Maize+Legumes—Wheat. (b) Wheat. (c) N.A. (ii) (a) and (b) N.A, (iii) 24.6.1958. (iv) (a) 3 ploughings. (b) Behind the plough. (c) to (e) N.A. (v) 20 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super at sowing and 20 lb./ac. of N as A/S at earthing up. (vi) Jaunpur. (vii) Unirrigated. (viii) Filling and earthing. (ix) 26.45". (x) 23.9.1958.

2. TREATMENTS :

Same as in expt. no. 58(124) on page 484.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 34'×23'. (b) 33'×22'. (v) 6"×6". (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1958—contd. (b) N.A. (c) Nil. (v) (a) N.A. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1353 lb./ac. (ii) 382.6 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5	6
Av. yield	975	1425	1500	1485	825	1905

S.E./mean = 191.3 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 59(92).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'C'.**

Object :—To find out a suitable legume mixture with Maize to be followed by Wheat.

1. BASAL CONDITIONS :

(i) (a) Maize+Legumes—Wheat. (b) Wheat. (c) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (ii) (a) and (b) N.A. (iii) 4.6.1959. (iv) (a) 3 ploughings. (b) Behind the plough. (c) 8 srs./ac. (d) and (e) N.A. (v) 20 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super at sowing and 20 lb./ac. of N as A/S at earthing up. (vi) Jaunpur. (vii) Unirrigated. (viii) Filling and earthing up. (ix) 27.85" (x) 6.9.1959.

2. TREATMENTS :

Same as in expt. no. 58(124) on page 484.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 37¼'×21'. (b) 36½'×20'. (v) 6"×6". (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1958—contd. (b) No. (c) Nil. (v) (a) N.A. (b) Nil. (vi) and (vii) N.A.

5. RESULTS :

(i) 3065 lb./ac. (ii) N.A. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5	6
Av. yield	3700	3290	3137	2935	1713	3615

Crop :- Maize. **Ref :- Bh. 58(158).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'C'.**

Object :—To study the use of Moong and Kalai as intermediate crops in Maize—Wheat rotation.

1. BASAL CONDITIONS :

(i) (a) Maize—Wheat. (b) Wheat. , (c) N.A. (ii) (a) and (b) N.A. (iii) 23.6.1958. (iv) (a) 3 ploughings. (b) Behind the plough. (c) 8 srs./ac. (d) N.A. (e) —. (v) 20 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super at sowing and 20 lb./ac. of N as A/S at earthing up. (vi) N.A. (vii) Unirrigated. (viii) Earthing up, hoeing and gap filling. (ix) 26.45″. (x) 20.9.1958.

2. TREATMENTS :

Same as in expt. no. 57(130) on page 483.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 34′×23′. (b) 33′×22′. (v) 6″×6″. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Grain and straw yield. (iv) (a) to (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 1566 lb./ac. (ii) 399.9 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5
Av. yield	1585	1500	1674	1650	1419

S.E./mean = 199.9 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 56(209).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'C'.**

Object :—To see the effect of different crops on soil fertility as shown by the yield of the succeeding Maize crop.

1. BASAL CONDITIONS :

(i) (a) and (b) As per treatments. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 9.6.1956. (iv) (a) 3 spadings. (b) Line sowing. (c) 8 srs./ac. (d) $1\frac{1}{2}'\times 1'$. (e) N.A. (v) Nil. (vi) Jaunpur. (vii) Unirrigated. (viii) N.A. (ix) 43.73″. (x) 7.10.1956.

2. TREATMENTS :

6 previous crops to Maize : C_1 = Gram, C_2=Pea, C_3=*Khesari*, C_4=*Masoor*, C_5=Wheat and C_6=*Sanji.*

3. DESIGN :

(i) R.B.D. (ii) 6. (b) N.A. (iii) 4. (iv) (a) 14′×11′. (b) 12′×9′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1956. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 834 lb./ac. (ii) 547.2 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	C_1	C_2	C_3	C_4	C_5	C_6
Av. yield	1042	1003	784	810	669	694

S.E./mean = 273.6 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 57(203).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'C'.**

Object :—To see the effect of different crops on soil fertility as shown by the yield of the succeeding Maize crop.

1. BASAL CONDITIONS :

(i) (a) and (b) As per treatments. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 13.7.1957. (iv) (a) 2 spadings. (b) Line sowing. (c) 1 oz./plot. (d) $1\frac{1}{2}'\times 1'$. (e) N.A. (v) Nil. (vi) Jaunpur (medium). (vii) Unirrigated. (viii) 1 hoeing, weeding and earthing up. (ix) 15.77″. (x) 25.9.1957.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 56(209) on page 487.

5. RESULTS :

(i) 246 lb./ac. (ii) 190.9 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	C_1	C_2	C_3	C_4	C_5	C_6
Av. yield	272	246	207	298	311	142

S.E./mean = 95.5 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 58(223).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'C'.**

Object :—To test the effect of different crops on soil fertility as shown by the yield of succeeding Maize crop.

1. BASAL CONDITIONS :

(i) (a) and (b) As per treatments. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 9.6.1958. (iv) (a) Spadings. (b) Line sowing. (c) 8 srs./ac. (d) Rows 1½′ apart. (e) —. (v) N.A. (vi) Jaunpur. (vii) Irrigated. (viii) Nil. (ix) 20.25″. (x) 21.8.1958.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 56(209) on page 487.

5. RESULTS :

(i) 514 lb./ac. (ii) 65.0 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	C_1	C_2	C_3	C_4	C_5	C_6
Av. yield	518	402	505	662	298	700

S.E./mean = 32.5 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 59(161).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'C'.**

Object :—To test the effect of different crops on soil fertility as shown by the yield of succeeding Maize crop.

1. BASAL CONDITIONS :

(i) (a) and (b) As per treatments. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 10.6.1959. (iv) (a) 4 spadings. (b) Line sowing. (c) 10 srs./ac. (d) Rows 18″ apart. (e) 1. (v) Nil. (vi) Kalimpong. (vii) Unirrigated. (viii) 1 weeding by spade. (ix) 25.70″. (x) 29.8.1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 56(209) on page 487.

5. RESULTS :

(i) 506 lb./ac. (ii) 336.0 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	C_1	C_2	C_3	C_4	C_5	C_6
Av. yield	661	376	350	480	117	1050

S.E./mean = 168.0 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 54(56)**

Site :- Agri. Res. Instt., Sabour. **Type :- 'C'.**

Object :—To test the effect of rabi legumes on yield of Maize crop.

1. BASAL CONDITIONS :

(i) (a) Legumes—Maize—Legumes. (b) Legumes. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 18.6 1954. (iv) (a) Spading twice at an interval of 15 days. (b) Sown in line. (c) 2 oz./plot. (d) $1\frac{1}{2}' \times 1'$. (e) N.A. (v) No. (vi) Jaunpur (late). (vii) Unirrigated. (viii) 2 weedings with intercultures at an interval of 15 days and thinning. (ix) 40.46″. (x) 19.9.1954.

2. TREATMENTS :

4 *rabi* crops preceding Maize : C_1=Gram, C_2=Pea, C_3=*Sanji* and C_4=Lucerne.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 2. (iv) (a) and (b) $12' \times 9'$. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Grain and stalk yield. (iv) and (v) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 180.7 lb./ac. (ii) 65.78 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	C_1	C_2	C_3	C_4
Av. yield	305	198	122	98

S.E./mean = 46 5 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 55(259).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'C'.**

Object :—To find the optimum relationship between spacing and the no. of plants per hill in checker type of sowing.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 18.6.1955. (iv) (a) 4 ploughings by country plough. (b) Sowing on hills. (c) 7 srs./ac. (d) and (e) As per treatments. (v) 40 lb./ac. of N as A/S/+ 40 lb./ac. of P_2O_5 as Super $\frac{1}{2}$ at sowing and $\frac{1}{2}$ at earthing. (vi) Jaunpur. (vii) Unirrigated. (viii) 2 weedings, 3 hoeings and 1 earthing. (ix) and (x) N.A.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 distances between hills :- $D_1=2'$ and $D_2=3'$.
(2) Number of plants/hill :- $H_1=2$, $H_2=3$ and $H_3=4$.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) $30' \times 24'$. (b) $24' \times 18'$. (v) $3' \times 3'$. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) 1955—1956. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS .

(i) 1155 lb./ac. (ii) 778.4 lb./ac. (iii) Main effect of D alone is highly significant. (iv) Av. yield of grain in lb./ac.

	H_1	H_2	H_3	Mean
D_1	1960	1774	1327	1687
D_2	828	624	417	623
Mean	1394	1199	872	1155

S.E. of D marginal mean = 183.5 lb./ac.
S.E. of H marginal mean = 224.7 lb./ac.
S.E. of body of table = 317.8 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 56(258).**
Site :- Agri. Res. Instt., Sabour. **Type :- 'C'.**

Object :—To study the effect of topping on the yield of Maize.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 11.6.1956. (iv) (a) 4 ploughings by *desi* plough. (b) Row spacing. (c) 7 srs./ac. (d) 2′×1′. (e) 1. (v) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super ½ at sowing and ½ at earthing. (vi) Jaunpur. (vii) Unirrigated. (viii) 1 spading, 1 hoeing and 1 earthing. (ix) and (x) N.A.

2. TREATMENTS :

1. Control (no topping).
2. Topping after pollination.
3. Topping 7 days after pollination.
4. Pulling out tessel soon after pollination.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 36′×20′. (b) 32′×16′. (v) 2′×2′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Endrin was sprayed against possible attack of borer. (iii) Grain yield. (iv) (a) to (c) No (v) to (vii) Nil.

5. RESULTS :

(i) 1694 lb./ac. (ii) 475.6 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4
Av. yield	1730	1715	1672	1659

S.E /mean = 194.2 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 58(128).**
Site :- Bot. Sub-Stn., Sepaya. **Type :- 'C'.**

Object :—To find a suitable legume mixture with Maize to be followed by Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Sugarcane. (c) 2½mds./ac. of A/S+2½ mds./ac. of Super. (ii) (a) Sandy loam. (b) N.A. (iii) 23.6.1958. (iv) (a) 2 ploughings by Bihar plough. (b) Behind the plough. (c) 40 lb./ac. (d) Rows 2′ apart. (e) 1. (v) 20 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super at the time of sowing and 20 lb./ac. of N as A/S at earthing. (vi) Jaunpur. (vii) Unirrigated. (viii) 1 weeding and 1 earthing. (ix) 49.19″. (x) 27.9.1958.

2. TREATMENTS :

T_1=Maize+Groundnut.
T_2=Maize+Cowpea.
T_3=Maize+*Kalai.*
T_4=Maize+*Moong.*
T_5=Maize+*Dhaincha.*
T_6=Maize alone.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 37′×26′. (b) 33′×22′. (v) 2′×2′. (vi) Yes.

4. GENERAL :

(i) Not good. (ii) Attack of stem borer. (iii) Grain yield. (iv) (a) 1958—contd. (b) No. (c) Nil. (v) (a) At many research stations. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 292 lb./ac. (ii) 123.5 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	308	78	689	354	86	238

S.E./mean = 61.7 lb./ac,

Crop :- Maize *(Kharif).* **Ref :- Bh. 59(71).**
Site :- Bot. Sub-Stn., Sepaya. **Type :- 'C'.**

Object :—To find out a suitable legume mixture with Maize to be followed by Wheat.

1. BASAL CONDITIONS :

(i) (a) As per treatments. (b) Wheat. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 11.6.1959. (iv) (a) 2 ploughings. (b) Line sowing. (c) 30 srs./ac. (d) Rows 2′ apart. (e) 1. (v) Nil. (vi) Jaunpur. (vii) Unirrigated. (viii) One weeding and one earthing. (ix) 40″. (x) 27.9.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 58 (128) on page 490.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) 1958—contd. (b) No. (c) Nil. (v) (a) At many research stations. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1333 lb./ac. (ii) 142.9 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	1600	708	1315	1180	1358	1840

S.E./mean = 71.4 lb./ac.

Crop :- Maize *(Kharif).* **Ref :- Bh. 56(115).**
Site :- Bot. Sub. Stn., Sepaya. **Type :- 'C'.**

Object :—To study the utility of Moong and Kalai as intermediate crops in Maize and wheat rotation.

1. BASAL CONDITIONS :

(i) (a) As per treatments. (b) Wheat. (c) N.A. (ii) (a) Clayey loam. (b) N.A. (iii) 6.6.1956. (iv) (a) 4 ploughings by *desi* plough. (b) Behind the plough. (c) 40 srs./ac. (d) Rows 1′ apart. (e)—. (v) Nil. (vi) Jaunpur. (vii) Unirrigated. (viii) Hoeing and weeding once. (ix) 32.65″. (x) 17.9.1956.

2. TREATMENTS :

1. Maize alone.
2. Maize—*Kalai* (fodder).
3. Maize—*Kalai* (G.M.).
4. Maize—*Moong* (fodder).
5. Maize—*Moong* (G.M.).

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) 120′×33′. (iii) 4. (iv) (a) 33′×22′. (b) 29′×18′. (v) 2′×2′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) to (c) No. (v) (a) At many research stations. (b) Nil. (vi) Nil. (vii) *Moong* and *Kalai* crops failed.

5. RESULTS :

(i) 1418 lb./ac. ii) 107.2 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5
Av. yield	1351	1426	1630	1394	1292

S.E./mean = 53.6 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 56(110).**

Site :- Bot. Sub-Stn., Sepaya. **Type :- 'C'.**

Object :—To find out the optimum spacing for Maize.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Wheat. (c) N.A. (ii) (a) Loam clay. (b) N.A. (iii) 7.6.1956. (iv) (a) Once ploughed by Bihar plough, once by cultivator and once ploughed by country plough for sowing. (b) Behind the plough. (c) 8 srs./ac. (d) As per treatments. (e) 2. (iv) 20 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super at sowing in furrows and 20 lb./ac. of N as A/S at earthing. (vi) Jaunpur. (vii) Unirrigated. (viii) 1 weeding and 1 earthing. (ix) 32.65″. (x) 18, 19.9.1956.

2. TREATMENTS :

Strips in one direction :
3 row spacings : R_1=18″, R_2=24″ and R_3=30″.

Strips in orthogonal direction :
3 plant spacings : P_1=9″, P_2=12″ and P_3=15″.

3. DESIGN :

(i) Strip-plot. (ii) (a) 9. (b) 300′×105′. (iii) 4. (iv) (a) 33′×22′. (b) 27′×16′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Cob, grain and straw yield. (iv) (a) to (c) No. (v) (a) At many research stations. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 744 lb./ac. (ii) (a) 439.2 lb./ac. (b) 343.3 lb./ac. (c) 216.4 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	R_1	R_2	R_3	Mean
P_1	687	781	897	788
P_2	573	693	777	681
P_3	777	794	988	853
Mean	679	756	853	774

S.E. of difference of two

1. R marginal means = 179.3 lb./ac.
2. P marginal means = 140.2 lb./ac.
3. P means at the same level of R = 218.5 lb./ac.
4. R means at the same level of P = 187.7 lb./ac.

Crop :- Maize. **Ref :- Bh. 56(5).**

Site :- Govt. Agri. Farm, Siwan. **Type :- 'C'.**

Object :—To find out the best spacing for Maize.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Wheat+Gram. (c) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super for wheat and 40 lb./ac. of P_2O_5 for gram. (ii) (a) Sandy loam. (b) N.A. (iii) 25.6.1956. (iv) (a) Ploughing by Bihar senior plough and cultivating. (b) and (c) N.A. (d) As per treatments. (e) 2. (v) Castor cake at 5 mds./ac., Super at 2½ mds./ac. and A/S at 1 md./ac. applied on 29, 30.7.1956. (vi) Jaunpur (late). (vii) Unirrigated. (viii) 1 weeding and 1 earthing up. (ix) 42.80″. (x) 30.9.1956 to 1.10.1956.

2. TREATMENTS :

Same as in expt. no. 56(110) on page 492.

3. DESIGN :

(i) Strip-plot. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) and (b) 33′×33′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. Crop lodged. (ii) Nil. (iii) Yield of grain. (iv) (a) to (c) No. (v) (a) At many research stations. (b) Nil. (vi) Continuous rain for a fortnight. (vii) Nil.

5. RESULTS :

(i) 767 lb./ac. (ii) (a) 169.2 lb./ac. (b) 116.1 lb./ac. (c) 96.3 lb./ac. (iii) Main effect of P is significant. (iv) Av. yield of grain in lb./ac.

	R_1	R_2	R_3	Mean
P_1	668	823	689	727
P_2	710	663	720	698
P_3	746	923	962	877
Mean	708	803	790	767

S.E. of difference of two

1. R marginal means = 69.1 lb./ac.
2. P marginal means = 47.4 lb./ac.
3. P means at the same level of R = 73.0 lb./ac.
4. R means at the same level of P = 88.7 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 55(70).**

Centre :- Village Ekamba (Purnea, c.f.) **Type :- 'C'.**

Object :—To find out the prevailing cultural practices and to find out the improved ones for Maize.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Wheat. (c) Cowdung. (ii) Sandy loam. (iii) 20 lb./ac. of N as A/S and 40 lb./ac. of P_2O_5 as Super at the time of sowing and 20 lb./ac. of N as A/S at the time of earthing up. (iv) Local. (v) (a) to (c) N.A. (d) As per treatments. (e) N.A. (vi) 8.6.1955. (vii) Unirrigated. (viii) Earthing, weeding and rogueing. (ix) 76″. (x) 3.9.1955.

2. TREATMENTS :

Main-plot treatments :
2 row spacings : $R_1=2'$ and $R_2=2\frac{1}{2}'$.

Sub-plot treatments :
2 plant spacings : $P_1=9''$ and $P_2=12''$.

3. DESIGN :

(i) and (ii) A long, level, upland was selected, which was laid out in a split-plot with 6 replications. 2 sub-plots/main-plot ; 2 main-plots/block. (iii) (a) and (b) $72' \times 15'$. (iv) Yes.

4. GENERAL :

(i) Good but affected by excessive rainfall. (ii) Attack of leaf spot and stem-borer reported. (iii) Biometric observations and grain yield. (iv) and (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 873 lb./ac. (ii) (a) 333.2 lb./ac. (b) 396.2 lb./ac. (iii) Interaction R×P is significant. (iv) Av. yield of grain in lb./ac.

	R_1	R_2	Mean
P_1	1058	691	875
P_2	940	802	871
Mean	999	747	873

S.E. of difference of two

1.	R marginal means	= 136.1 lb./ac.
2.	P marginal means	= 161.9 lb./ac.
3.	P means at the same level of R	= 229.0 lb./ac.
4.	R means at the same level of P	= 211.6 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 55(67).**

Centre :- Village Venla (Purnea, c.f.). Type :- 'C'.

Object :—To study the prevailing cultural practices and to find out improved ones for Maize.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Wheat. (c) Nil. (ii) Sandy loam. (iii) 20 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super at sowing time and 20 lb./ac. of N at the time of earthing up. (iv) *Tinpakhia*—Local. (v) (a) The field was ploughed by tractors in the month of April, 1955. Later on it was ploughed thrice at the time of sowing and the soil well pulverised. (b) N.A. (c) 6 srs./ac. (d) As per treatments. (e) 3. (vi) 8.6.1955. (vii) Unirrigated. (viii) 3 weedings, 1 earthing and rogueing of thin and week plants. (ix) 76". (x) 5.9.1955.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 55(70) on page 493.

4. GENERAL :

(i) Good. (ii) Stem-borer and leaf-spot. (iii) Yield of grain and straw. (iv) (a) to (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 584 lb./ac. (ii) (a) 170.3 lb./ac. (b) 112.0 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	R_1	R_2	Mean
P_1	491	698	595
P_2	591	553	572
Mean	541	626	584

S.E. of difference of two

1. R marginal means = 69.5 lb./ac.
2. P marginal means = 45.7 lb./ac.
3. P means at the same level of R = 64.6 lb./ac.
4. R means at the same level of P = 83.2 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 55(38).**

Centre :- Dumka (Santhal Paraganas, c.f.). **Type :- 'C'.**

Object :—To study the prevailing cultural practices and find out improved ones for Maize.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Maize. (c) Cowdung. (ii) Acidic ; Sandy loam. (iii) 20 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 at the time of sowing and 20 lb./ac. of N as the A/S at time of earthing. (iv) Jaunpur (improved). (v) (a) 3 ploughings by *desi* plough. (b) and (c) N.A. (d) As per treatments. (e) 2. (vi) 21.6.1955. (vii) Unirrigated. (viii) Hoeing and earthing. (ix) 25.81″. (x) 20.9.1955.

2. TREATMENTS :

Same as in expt. no. 55(70) on page 493.

3. DESIGN :

(i) and (ii) Split-plot with 2 main-plots/replication and 2 Sub-plots/main-plot. Site selected according to the convenience ; the plot was well levelled and nearly typical representative of the locality:—2 trials in the district. (iii) (a) 62′×20′. (b) 60′×18′. (iv) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Germination, general flowering ; grain, straw and cob yield. (iv) (a) to (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 2352 lb./ac. (ii) (a) 49.1 lb./ac. (b) 99.5 lb./ac. (iii) Main effect of R and interaction R×P are highly significant. (iv) Av. yield of grain in lb./ac.

	R_1	R_2	Mean
P_1	2420	2212	2316
P_2	2752	2026	2389
Mean	2586	2119	2352

S.E. of difference of two

1. R marginal means = 34.7 lb./ac.
2. P marginal means = 70.3 lb./ac.
3. P means at the same level of R = 99.5 lb./ac.
4. R means at the same level of P = 78.5 lb./ac.

Crop :- Maize *(Kharif).* **Ref :- Bh. 55(39).**

Centre :- Dumka (Santhal Paraganas, c.f.). **Type :- 'C'.**

Object :—To study the prevailing cultural practices and find out improved ones for Maize.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Maize. (c) Cowdung. (ii) Acidic and sandy loam. (iii) 20 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 each at the time of sowing. 20lb./ac. of N as (A/S) at the time of earthing. (iv) Jaunpur (Improved). (v) (a) 3 ploughings by *desi* plough. (b) and (c) N.A. (d) As per treatments. (e) 2. (vi) 20.6.1955. (vii) Unirrigated. (viii) Hoeing and earthing. (ix) 25.81", (x) 19.9.1955.

2. TREATMENTS :

Same as in expt. no. 55(70) on page 493.

3. DESIGN :

(i) and (ii) Split-plot with 2 main-plots/replication and 2 sub-plots/main-plot, Site selected according to the convenience ; the plot was well levelled and nearly typical representative of the locality—2 trials in the district. (iii) (a) 72′×17′. (b) 72′×15′. (iv) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Germination, general flowering and grain and straw yield. (iv) (a) to (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 2254 lb./ac. (ii) (a) 265.3 lb./ac. (b) 116.1 lb./ac. (iii) Main effect of R and interaction R×P are highly significant. (iv) Av. yield of grain in lb./ac.

	R_1	R_2	Mean
P_1	2572	1943	2257
P_2	2869	1632	2250
Mean	2721	1787	2254

S.E. of difference of two.

1. R marginal means = 187.6 lb./ac.
2. P marginal means = 82.1 lb./ac.
3. P means at the same level of R = 116.1 lb./ac.
4. R means at the same level of P = 204.8 lb./ac.

Crop :- Maize *(Kharif).* **Ref :- Bh. 55(159).**

Centre :- Village Amawana Vijaipur (Gopalganj, c.f.) **Type :- 'C'.**

Object :—To study the prevailing cultural practices and find out improved ones.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Wheat. (c) F.Y.M. at 100 lb./ac. (ii)Sandy loam. (iii) 40 lb./ac. of P_2O_5 as Super at the time of sowing ; 40 lb./ac. of N as A/S half at sowing and half at earthing. (iv) Jaunpur, (Improved). (v) (a) 6 ploughings. (b) and (c) N.A. (d) As per treatments. (e) N.A. (vi) 12.6.1955. (vii) Unirrigated. (viii) Weeding, earthing and thinning to one plant/hole. (ix) 30". (x) 28.9.1955.

2. TREATMENTS :

Same as in expt. no. 55(70) on page 493.

3. DESIGN

(i) Suitably irrigated land belonging to agreeable farmers was selected. Split plot design with 5 replications. (ii) 2 main-plot/replication and 2 sub-plot/main-plot. Experiment conducted at two places. (iii) (a) 33′×22′. (b) 30′×19′. (iv) Yes.

4. GENERAL :

(i) Average. (ii) Mild attack of white ants. rickets, stemborer and plant lice. Application of 50% wettable B.H.C. against plant lice and stemborer. (iii) Number of cobs and grain yield. (iv) (a) to (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 1094 lb./ac. (ii) (a) 86.7 lb./ac. (b) 292.4 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	R_1	R_2	Mean
P_1	1124	1089	1106
P_2	951	1210	1081
Mean	1038	1150	1094

S.E. of difference of two

1. R marginal means = 38.8 lb./ac.
2. P marginal means = 130.8 lb./ac.
3. P means at the same level of R = 136.4 lb./ac.
4. R means at the same level of P = 184.9 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 55(160).**

Centre :- Village Sirisia (Gopalgunj, c.f.). **Type :- 'C'.**

Object :—To study the prevailing cultural practices and find out improved ones for Maize.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Wheat. (c) F.Y.M. at 15 c.l./ac. (ii) Sandy loam. (iii) 40 lb./ac. of P_2O_5 as Super at the time of sowing ; 40 lb./ac. of N as A/S, half at sowing and half at earthing. (iv) Jaunpur, (Improved). (v) (a) 6 ploughings. (b) and (c) N.A. (d) As per treatments. (e) N.A. (vi) 16.6.1955. (vii) Unirrigated. (viii) Weeding, earthing and thinning to one plant/hole. (ix) 30″. (x) 25.9.1955.

2. TREATMENTS. to 4. GENERAL :

Same as in expt. no. 55(159) on page 496.

5. RESULTS :

(i) 1646 lb./ac. (ii) (a) 205.3 lb./ac. (b) 210.7 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	R_1	R_2	Mean
P_1	1637	1493	1565
P_2	1666	1788	1727
Mean	1652	1641	1646

S.E. of difference of two.

1. R marginal means = 83.8 lb./ac.
2. P marginal means = 86.0 lb./ac.
3. P means at the same level of R = 121.6 lb./2c.
4. R means at the same level of P = 119.8 lb./ac.

Crop :- Maize. **Ref :- Bh. 54(31).**

Site :- Bot., Sub-Stn. Monghyr. **Type :- 'CM'.**

Object :—To study the effect of earthing on yield with and without manuring.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Rahar*. (c) Nil. (ii) (a) Loam. (b) N.A. (iii) 6, 7.7.1954. (iv) (a) 3 *desi* ploughings. (b) Dibbling. (c) N.A. (d) 2′×1′. (e) 2. (v) Nil. (vi) Jaunpur (late). (vii) Unirrigated. (viii) 3 Weedings. (ix) 27.10″. (x) 27 to 29.9.1954.

2. TREATMENTS :

Main-plot trearments :

2 leve s of earthing : E_1=Earthing and E_2=No earthing.

Sub-plot treatments :

3 levels of manures : $M_0=0$, M_1=40 lb./ac. of N and M_2=40 lb./ac. of N+40 lb./ac. of P_2O_5.

Sub-sub plot treatments :

2 times of application of manures : T_1=Full dose at sowing and T_2=Half at sowing and half at earthing.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication. 3 sub-plots/main-plot. 2 sub-sub-plots/sub-plot. (b) N.A. (iii) 6. (iv) (a) 20′×20′. (b) 16′×18′. (v) 1 row all round. (vi) Yes.

4. GENERAL :

(i) Poor ; no lodging. (ii) N.A (iii) Germination and grain yield. (iv) (a) to (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 316.5 lb./ac. (ii) (a) 105.4 lb./ac. (b) 97.1 lb./ac. (c) 104.5 lb./ac. (iii) Main effect of T is highly significant and effect of E is significant. (iv) Av. yield of grain in lb./ac..

	M_0	M_1	M_2	Mean	E_1	E_2
T_1	123.2	363.0	432.6	306.3	260.4	352.2
T_2	94.0	380.8	505.6	326.8	294.9	358.6
Mean	108.6	371.9	469.1	316.5	277.6	355.4
E_1	74.5	329.0	429.4			
E_2	142.6	414.8	508.8			

S.E. of difference of two.

1. E marginal means = 25.1 lb./ac.
2. M marginal means = 28.0 lb./ac.
3. T marginal means = 24.6 lb./ac.
4. M means at the same level of E = 39.6 lb./ac.
5. E means at the same level of M = 40.9 lb./ac.
6. T means at the same level of E = 34.8 lb./ac.
7. E means at the same level of T = 35.2 lb./ac.
8. T means at the same level of M = 42.7 lb./ac.
9. M means at the same level of T = 50.0 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 56(166).**

Site :- Agri. Res. Instt., Pusa. **Type :- 'CM'.**

Object—To study the effect of earthing and time of application of manures on Maize crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Gram and pea. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 8.6.1956. (iv) (a) 2 ploughings. (b) Behind the plough. (c) 8 srs./ac. (d) 2′×1′. (e) 1. (v) 200 mds./ac. of F.Y.M. (vi) Kalimpong. (vii) Unirrigated. (viii) Earthing as per treatments. (ix) 43.12″. (x) 29.9.1956.

2. TREATMENTS :

1. Earthing+full dose of manure at sowing time.
2. Earthing+$\frac{1}{2}$ dose at sowing time+$\frac{1}{2}$ dose at time of earthing.
3. No earthing+full dose at sowing time.
4. No earthing+$\frac{1}{2}$ dose at sowing time+$\frac{1}{2}$ dose when earthing was done in treatments 1 and 2.

Full dose of manure=40 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 36′×20′. (b) 32′×16′. (v) 2′×2′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Attack of stem borers. (iii) Grain yield. (iv) (a) 1955—1956. (b) No (c) Nil. (v) (a) Sabour. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 2657 lb./ac. (ii) 312.0 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4
Av. yield	2845	2792	2533	2458

S.E./mean = 127.4 lb./ac.

Crop :- Maize *(Kharif).* **Ref :- Bh. 55(260).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'CM'.**

Object :—To study the effect of earthing with time of application of manure on Maize.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 15.6.1955. (iv) (a) 4 ploughings by *deshi* plough. (b) Row sowing. (c) 7 srs./ac. (d) 2′×1′. (e) 1. (v) Nil. (vi) Jaunpur. (vii) Irrigated. (viii) 1 spading, 1 weeding and earthing as per treatments. (ix) and (x) N.A.

2. TREATMENTS AND 3. DESIGN :

Same as in expt. no. 56(166) on page 498.

4. GENERAL :

(i) Poor. (ii) Nil. (iii) yield of grain. (iv) (a) 1955—1956. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 455.8 lb./ac. (ii) 216.6 lb./ac, (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4
Av. yield	438	578	385	423

S.E./mean = 88.4 lb./ac.

Crop :- Maize *(Kharif).* **Ref :- Bh. 56(259).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'CM'.**

Object :—To study the effect of earthing and time of application of manure on Maize.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 2.7.1956. (iv) (a) 4 ploughings by *desi* plough. (b) Row sowing. (c) 7 srs./ac. (d) 2′×1′. (e) 1. (v) Nil. (vi) Jaunpur. (vii) Irrigated. (viii) One spading, 1 weeding and earthing as per treatments. (ix) and (x) N.A.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 56(166) on page 498.

4. GENERAL :

(i) Good. (ii) No disease, but follidol was sprayed for checking possible borer attack. (iii) Grain yield. (iv) (a) 1955—1956. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 850 lb./ac. (ii) 253.5 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4
Av. yield	865	822	808	907

S.E./mean = 103.5 lb./ac.

Crop :- Maize ***(Kharif).*** **Ref :- Bh. 58(141).**

Site :- Distt. Agri. Farm, Putida. **Type :- 'CMV'.**

Object :—To study the effect of different spacings, manures and varieties on Maize.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Gram. (c) Nil. (ii) (a) Clayey loam. (b) N.A. (iii) 7.7.1958. (iv) (a) 3 ploughings. (b) To open the furrow with hand hoe and put the seed. (c) 8 srs./ac. (d) As per treatments. (e) 2. (v) Nil. (vi) As per treatments. (vii) Unirrigated. (viii) 1 weeding and 1 hoeing. (ix) and (x) N.A.

2. TREATMENTS :

Main-plot treatments :

3 varieties ; V_1=Jaunpur, V_2=Mokhwa×Barital and V_3=Piarkha×Fransisco.

Sub-plot treatments :

All combinations of (1) and (2)

(1) 3 row spacings : $R_1=2'$, $R_2=2\frac{1}{2}'$ and $R_3=3'$.

(2) 3 manures : $M_0=0$, $M_1=40$ lb./ac. of N as A/S+30 lb./ac. of P_2O_5 as Super and $M_2=80$ lb./ac. of N as A/S+60 lb./ac. of P_2O_5 as Super.

3. DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/replication, 9 sub-plots/main-plot. (b) N.A. (iii) 2. (iv) (a) 23'×18'. (b) 21'×16'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Grain and straw yield. (iv) (a) to (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 2495 lb./ac. (ii) (a) 1405 lb./ac. (b) 783 lb./ac. (iii) Main effect of M alone is highly significant. (iv) Av. yield of grain in lb./ac.

	R_1	R_2	R_3	M_0	M_1	M_2	Mean
V_1	2250	2778	2406	1444	2867	3122	2478
V_2	2661	2144	1939	1417	1900	3428	2248
V_3	2761	3089	2425	2089	2931	3256	2759
Mean	2557	2670	2257	1650	2566	3269	2495
M_0	1689	1667	1594				
M_1	2183	3100	2414				
M_2	3800	3244	2761				

S.E. of difference of two

1. V marginal means	=	468 lb./ac.
2. M or R marginal means	=	261 lb./ac.
3. M or R means at the same level of V	=	452 lb./ac.
4. V means at the same level of M or R	=	596 lb./ac
5. means in the body of M×R table	=	452 lb./ac

Crop :- Maize *(Rabi)*. **Ref :- Bh. 58(211).**

Site :- Irrigation Res. Stn., Madhepura. **Type :- 'IM'.**

Object :—To study the effect of fertilizers and irrigations on Maize yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Madhepura. (iii) 16.3.1958. (iv) (a) 6 ploughing. (b) Line sowing. (c) 6 srs./ac. (d) and (e) N.A. (v) 100 mds./ac. of F.Y.M. (vi) Jaunpur (late). (vii) Irrigated. (viii) Hoeing, weeding and earthing up. (ix) 10.42". (x) 4.7.1958.

2. TREATMENTS :

Main-plot treatments :

2 levels of manures :—M_1=40 lb./ac. of N as A/S+ 40 lb./ac. of P_2O_5 as Super+20 lb./ac. of K_2O as Mur. Pot. and M_2=60 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super+20 lb./ac. of K_2O as Mur. Pot.

Sub-plot treatments :

4 Intervals of irrigation :—I_1=25, I_2=20, I_3=15 and I_4=10 days interval.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication; 4 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 90'×13'. (b) 88'×11'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Grain and straw yield. (iv) (a) to (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 327 lb./ac. (ii) (a) 354.0 lb./ac. (b) 147.9 lb./ac. (iii) Main effect of I alone is significant. (iv) Av. yield of grain in lb./ac.

	I_1	I_2	I_3	I_4	Mean
M_1	158	304	383	349	299
M_2	214	259	484	461	355
Mean	186	282	434	405	327

S.E. of difference of two

1. M marginal means	=	125.2 lb./ac.
2. I marginal means	=	74.0 lb./ac.
3. I means at the same level of M	=	104.6 lb./ac.
4. M means at the same level of I	=	154.5 lb./ac.

Crop :- Maize *(Rabi)*. **Ref :- Bh. 59(140).**

Site :- Irrigation Res. Stn., Madhepura. **Type :- 'IM'.**

Object :—To study the effect of fertilizers and irrigations on Maize yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy loam. (b) Refer soil analysis, Madhepura. (iii) 10.2.1959. (iv) (a) 6 ploughings. (b) Line sowing. (c) 6 srs./ac.

(d) 2′×1½′. (e) N.A. (v) Nil. (vi) Jaunpur. (vii) Irrigated. (viii) Once hoeing, weeding and earthing up. (ix) 5.15″. (x) 3.6.1959.

2. TREATMENTS :

Main-plot treatments :

2 levels of manures : M_1=40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super+20 lb./ac. of K as Mur. Pot.

M_2=60 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super+20 lb./ac. of K as Mur. Pot.

Sub-plot treatments :

4 intervals of irrigation : I_1=Pre-sowing irrigation, I_2=I_1+irrigation at 20 days interval, I_3=I_1+irrigation at 12 days interval and I_4=I_1+irrigation at 8 days interval.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication ; 4 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 90′×13′. (b) 88′×11′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Grain and straw yield. (iv) (a) to (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 975 lb./ac. (ii) (a) 256.6 lb./ac. (b) 220.7 lb./ac. (iii) Main effect of I alone is significant. (iv) Av. yield of grain in lb./ac.

	I_1	I_2	I_3	I_4	Mean
M_1	674	778	956	1072	870
M_2	848	1122	1111	1234	1079
Mean	761	950	1034	1153	975

S.E. of difference of two

1. M marginal means = 90.7 lb/ac.
2. I marginal means = 110.4 lb./ac.
3. I means at the same level of M = 156.1 lb./ac.
4. M means at the same level of I = 162.8 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 58(39).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'D'.**

Object :—To study the effect of soaking seeds in hormones on the yield of Maize.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Fallow. (c) Nil. (ii) (a) Reddish sandy. (b) Refer soil analysis, Kanke. (iii) 8.7.1958. (iv) (a) 3 ploughings. (b) Dibbled. (c) N.A. (d) 1½′×1′. (e) 3. (v) 40 lb./ac. of N as A/S+40 lb./ac of P_2O_5 as Super at sowing. (vi) Kalimpong. (vii) Unirrigated. (viii) Hoeing and earthing up. (ix) 26″. (x) 4.10.1958.

2. TREATMENTS :

Main-plot treatments :

2 durations of soaking seeds : S_1=4 and S_2=24 hours.

Sub-plot treatments :

7 hormones : H_0=Control (no hormone), H_1=I.A A. at 25 ppm., H_2=2—4—D at 25 ppm., H_3=N.A.A. at 25 ppm., H_4=I.A.A. at 100 ppm., H_5=2—4—D at 100 ppm. and H_6=N.A.A. at 100 ppm.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication ; 7 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 14′×10½′. (b) 12′×9′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Poor due to water logging. (ii) Nil. (iii) Grain and straw yield, study of individual plant characteristics. (iv) (a) to (c) No. (v) (a) and (b) No. (vi) and (vii) Nil.

5. RESULTS

(i) 1187 lb./ac. (ii) (a) 84.8 lb./ac. (b) 536.5 lb./ac. (iii) Interaction S×H is significant. (iv) Av. yield of grain in lb./ac.

	H_0	H_1	H_2	H_3	H_4	H_5	H_6	Mean
S_1	1850	2052	1553	794	1286	996	713	1321
S_2	1008	694	1177	1412	609	1173	1298	1053
Mean	1429	1373	1365	1103	948	1089	1006	1187

S.E. of difference of two
1. S marginal means = 22.6 lb./ac.
2. H marginal means = 268.2 lb./ac.
3. H means at the same level of S = 379.4 lb./ac.
4, S means at the same level of H = 113.3 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 59(5).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'D'.**

Object :—To study the effect of soaking seeds in hormones on the yield of Maize.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Wheat. (c) 40 lb./ac. of N+40 lb./ac. of P_2O_5. (ii) (a) Reddish sandy. (b) Refer soil analysis, Kanke. (iii) 31.6.1959. (iv) (a) 3 ploughings. (b) Dibbling. (c) N.A. (d) $1\frac{1}{2}' \times 1'$. (e) 3. (v) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super at sowing. (vi) Kalimpong. (vii) Unirrigated. (viii) Hoeing and earthing up once. (ix) 26″. (x) 15.9.1959.

2. TREATMENTS :

All combinations of (1) and (2)
(1) 2 durations of soaking seeds : S_1=4 and S_2=12 hours.
(2) 7 hormones : H_0=Control (soaking in water), H_1=I.A.A. at 25 ppm., H_2=2—4-D at 25 ppm., H_3=N.A.A. at 25 ppm., H_4=I.A.A. at 100 ppm., H_5=2–4-D at 100 ppm. and H_6=N.A.A. at 100 ppm.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 14. (b) N.A. (iii) 4. (iv) (a) $12\frac{1}{2} \times 11\frac{1}{2}'$. (b) $10\frac{1}{2}' \times 10'$. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield, study of individual plant characteristics. (iv) (a) to (c) No. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 2476 lb./ac. (ii) 679.6 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	H_0	H_1	H_2	H_3	H_4	H_5	H_6	Mean
S_1	2376	2410	2547	2372	2746	2493	2468	2486
S_2	2621	2376	2286	2982	2650	2286	2057	2465
Mean	2498	2393	2416	2677	2698	2390	2263	2476

S.E. of S marginal mean = 128.4 lb./ac.
S.E. of H marginal mean = 240.3 lb./ac.
S.E. of body of table = 339.8 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 58(116).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'D'.**

Object :—To study the effect of different hormones as aerial sprays on growth, physiology and yield of Maize.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Red laterite. (b) Refer soil analysis, Kanke. (iii) 5.7.1958. (iv) (a) 3 ploughings. (b) Dibbling. (c) 15 srs./ac. (d) 1½′×1′. (e) 3. (v) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super at sowing. (vi) Kalimpong (late). (vii) Unirrigated. (viii) Hoeing and earthing up. (ix) 36.8″. (x) 29.9.1958.

2. TREATMENTS :

7 hormone treatments : H_0=Control, H_1=I.A.A. at 25 ppm., H_2=N.A.A. at 25 ppm., H_3=2—4—D at 25 ppm., H_4=I.A.A. at 100 ppm., H_5=N.A.A. at 100 lb./ac. and H_6=2—4—D at 100 ppm.

The treatments are applied at three stages of growth : S_1=Thinning, S_2=Tasselling and S_3=Grain-filling.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4 (for each stage of spraying). (iv) (a) 14′×10.5′. (b) 12′×9′ (v) N.A. (vi) Yes.

4. GENERAL :

(i) Poor due to water logging. (ii) Nil. (iii) Grain and straw yield, height measurement and study of individual plant characteristics. (iv) (a) 1958—1960. (b) N.A. (c) Nil. (v) and (vi) Nil. (vii) Crop at S_2 and S_3 stages affected due to exececssive rains.

5. RESULTS :

(i) 745 lb./ac. (ii) 466.5 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	H_0	H_1	H_2	H_3	H_4	H_5	H_6
Av. yield	643	567	1109	643	1058	844	353

S.E./mean = 233.2 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 59(10).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'D'.**

Object :—To study the effect of hormones as aerial sprays at different stages on yield of Maize.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Wheat. (c) 40 lb./ac. of N+40 lb./ac. of P_2O_5. (ii) (a) Reddish sandy. (b) Refer soil analysis, Kanke. (iii) 2.6.1959. (iv) (a) 3 ploughings. (b) Dibbled. (c) N.A. (d) 1½′×1′. (e) 3. (v) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super at sowing. (vi) Kalimpong. (vii) Unirrigated. (viii) Hoeing and earthing up once. (ix) 32″. (x) 7.9.1959.

2. TREATMENTS :

Main-plot treatments :

7 hormones : H_0=Control (simple water spraying), H_1=I.A.A. 25 ppm., H_2=I.A.A. 100 ppm., H_3=N.A.A. 25 ppm., H_4=N.A.A. 100 ppm., H_5=2—4—D 25 ppm. and H_6=2—4—D 100 ppm.

Sub-plot treatments :

3 stages of spraying : S_1=At thinning, S_2=At tasseling and S_3=At grain-filling stage.

3. DESIGN:

(i) Split-plot. (ii) (a) 7 main-plots/block ; 3 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a) 17′×9′. (b) 14′×7′. (v) 1½′×1′. (v) Yes.

4. GENERAL :

(i) Good. (ii) 20 e.c. sprayed to control stem-borer attack. (iii) Grain and straw yield, study of individual plant characteristics. (iv) (a) 1958—N.A. (b) and (c) No. (v) to (vii) Nil.

5. RESULTS

(i) 3236 lb./ac. (ii) (a) 869.7 lb./ac. (b) 932.2 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	H_0	H_1	H_2	H_3	H_4	H_5	H_6	Mean
S_1	3742	2357	2506	3506	2973	2205	3518	2972
S_2	3999	2347	3053	2679	3434	2974	3587	3125
S_3	4368	3288	3671	3224	4259	3350	3112	3610
Mean	4036	2664	3077	3136	3555	2843	3406	3236

S.E. of difference of two

1. H marginal means = 410.0 lb./ac.
2. S marginal means = 287.7 lb./ac.
3. S means at the same level of H = 761.2 lb./ac.
4. H means at the same level of S = 744.0 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 56(78).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'D'.**

Object :—To study the effect of weedicides on weeds of Maize.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 11.6.1956. (iv) (a) 3 ploughings by *desi* plough. (b) Behind the plough. (c) 8 srs./ac. (d) Rows 2′ apart. (e) 1 to 2. (v) 20 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super at sowing time ; 20 lb./ac. N as A/S at earthing. (vi) Jaunpur. (vii) Unirrigated. (viii) 1 earthing. (ix) 29.80″. (x) 13.9.1956.

2. TREATMENTS :

6 weedicides : D_1=1 weeding by hand, D_2=2 weedings by hand, D_0=Feronoxone 0.063%. D_4=Feronoxone 0.125%, D_5=Chloroxone 0.063% and D_6=Choloroxone 0.125%.
Spraying done on 11.7.1956.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 24′×21$\frac{1}{5}$′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1956—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1441 lb./ac. (ii) 442.2 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	D_1	D_2	D_3	D_4	D_5	D_6
Av. yield	1298	1376	1526	1528	1817	1101

S.E./mean = 221.1 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 58(156).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'D'.**

Object :—To find out the suitable weedicide for maize as pre-emergence application.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Peas. (c) 40 lb./ac. of P_2O_5 as Super. (ii) (a) and (b) N.A. (iii) 21.6.1958. (iv) (a) 3 ploughings (b) Behind the plough. (c) 8 srs./ac. (d) Row to row 2′. (e) —. (v) 20 lb. ac. of N as

A/S+40 lb /ac. of P_2O_5 as Super at sowing and 20 lb./ac. of N as A/S at earthing up. (vi) Jaunpur. (vii) Unirrigated. (viii) Earthing up and gap filling. (ix) 26.45″. (x) 28.9.1958.

2. TREATMENTS :

4 weedicides : D_0=Control, D_1=Crag herbicide, D_2=M.C.P.A. (Agroxone) and D_3=Fernoxone.
1 lb./ac. of acid equivalent of each chemical dissolved in 1000 gallons of water and sprayed on 27.6.1958.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) 30′×23′. (b) 27′×20′. (v) 1½′ all round. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1958—contd. (b) N. A. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 436.9 lb./ac. (ii) 107.0 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	D_0	D_1	D_2	D_3
Av. yield	383	504	403	564

S.E./mean = 53.5 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 59(90)**

Site :- Agri. Res. Instt., Sabour. **Type :- 'D'.**

Object :—To find out a suitable weedicide for maize as pre-emergence treatment.

1. BASAL CONDITIONS :

(i) and (ii) N.A. (iii) 4.6.1959. (iv) (a) 3 ploughings. (b) Dibbling. (c) 8 srs./ac. (d) 2′×9″. (e) N.A. (v) 20 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super at sowing and 20 lb./ac. of N as A/S at earthing up. (vi) Jaunpur. (vii) Unirrigated. (viii) 1 earthing up. (ix) 27.85″. (x) 10.9.1959.

2. TREATMENTS :

4 weedicides : D_0=Control, D_1=Crag herbicide, D_2=Agroxone and D_3=Fernoxone.
Weedicides sprayed on 11.6.1959.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) 29′×22′. (b) 27′×20′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Attack of leaf roller, 15 lb./ac. of B.H.C. dusted. (iii) Grain and straw yield. (iv) (a) 1958—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2705 lb./ac. (ii) 598.1 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	D_0	D_1	D_2	D_3
Av. yield	1595	2939	2798	3487

S.E./mean = 267.5 lb./ac.

Crop :- Maize *(Kharif)*. **Ref :- Bh. 56(198).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'D'.**

Object :—To see the effect of insecticides on microbiological activities of soil.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 12.6.1956. (iv) (a) 3 spadings. (b) Line sowing. (c) 8 srs./ac. (d) $1\frac{1}{2}' \times 1'$. (e) N.A. (v) N.A. (vi) Jaunpur. (vii) Unirrigated. (viii) Earthing up. (ix) 24.24". (x) 5.9.1956.

2. TREATMENTS :

4 insecticides : I_0=Control, I_1=B.H.C. (5%) at 80 lb./ac., I_2=D.D.T. (5%) at 80 lb./ac. and I_3=Aldrin (5%) at 60 lb./ac.

3. DESIGN :

(i) R B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) $14' \times 11'$. (b) $12' \times 9'$. (v) 1' all round. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1956—N.A. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1122 lb./ac. (ii) 551.3 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	I_0	I_1	I_2	I_3
Av. yield	617	1440	1170	1260

S.E./mean = 275.7 lb./ac.

Crop :- Maize ***(Kharif).*** **Ref :- Bh. 58(218).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'D'.**

Object :—To test the effect of insecticides on microbiological activities of soil.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Gram. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 8.6.1958. (iv) (a) 3 spadings. (b) Line sowing. (c) 8 srs./ac. (d) rows $1\frac{1}{2}'$ apart. (e) N.A. (v) Nil. (vi) Local. (vii) Irrigated. (viii) Weeding twice and 1 earthing up. (ix) 25.89". (x) 21.8.1958.

2. TREATMENTS :

7 insecticides : I_0=Control, I_1=B.H.C. at 30 lb./ac., I_2=B.H.C. at 60 lb./ac., I_3=Aldrin at 30 lb./ac., I_4= Aldrin at 60 lb./ac., I_5=D.D.T. at 30 lb./ac. and I_6=D.D.T. at 60 lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) $14' \times 11'$. (b) $12' \times 9'$. (v) $1' \times 1'$. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1958—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 576 lb./ac. (ii) 297.0 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	I_0	I_1	I_2	I_3	I_4	I_5	I_6
Av. yield	441	603	700	622	603	635	428

S.E./mean = 148.5 lb./ac.

Crop :- Maize ***(Kharif).*** **Ref :- Bh. 59(164).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'D'.**

Object :—To test the effect of insecticides on microbiological activities of the soil.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Gram, (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 14.6.1959. (iv) (a) 3 spadings. (b) Line sowing by spade. (c) 10 srs/ac. (d) Rows 1½′ apart. (e) N.A. (v) Nil. (vi) Jaunpur. (vii) Nil. (viii) N.A. (ix) 23.52″. (x) 30.8.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 58(218) on page 507.

4. GENERAL :

(i) and (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1958—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2256 lb./ac. (ii) 971.2 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	I_0	I_1	I_2	I_3	I_4	I_5	I_6
Av. yield	2307	2463	2243	2709	2191	1776	2100

S.E./mean = 485.6 lb./ac.

Crop :- Marua *(Kharif)*. **Ref :- Bh. 57(189).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'M'.**

Object :—To find out the optimum dose of N, P and K for Marua crop.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Red laterite. (b) Refer soil analysis, Kanke. (iii) 9.6.1957/30, 31.7.1957 and 1.8.1957. (iv) (a) 2 ploughings. (b) Dibbling. (c) N.A. (d) 9″×9″. (e) 2 to 3. (v) Nil. (vi) Local. (vii) Unirrigated. (viii) 1 weeding and hoeing. (ix) 25.47″. (x) 26, 27.10.1957.

2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 3 levels of N as A/S : $N_0=0$, $N_1=20$ and $N_2=40$ lb./ac.
(2) 3 levels of P as Super : $P_0=0$, $P_1=20$ and P_2 40 lb./ac.
(3) 3 levels of K as Mur. Pot. : $K_0=0$, $K_1=20$ and $K_2=40$ lb./ac.

3. DESIGN :

(i) 3^3 partially confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) N.A. (iii) 4. (iv) (a) 24′×9′. (b) 21′×6′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1957—contd. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 452.2 lb./ac. (ii) 161.0 lb./ac. (iii) Main effects of N and P are highly significant. Interaction P×N significant. No other effect is significant. (iv) Av. yield of Marua in lb./ac.

	N_0	N_1	N_2	K_0	K_1	K_2	Mean
P_0	263	328	369	320	331	308	320
P_1	391	477	591	506	419	533	486
P_2	344	527	781	582	551	520	551
Mean	333	444	580	469	434	454	452
K_0	362	389	657				
K_1	310	436	557				
K_2	326	508	527				

S.E. of any marginal mean = 26.8 lb./ac.
S.E. of body of any table = 46.5 lb./ac.

Crop :- Marua ***(Kharif).*** **Ref :- Bh. 58(246).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'M'.**

Object :—To find out the optimum requirement of N, P and K for maximum yield of Marua.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Kanke. (iii) 13.6.1958/12, 14.7.1958. (iv) (a) 2 ploughings by *desi* plough. (b) Dibbling in lines. (c) 6 srs./ac. (d) 9″×9″. (e) 1 to 2. (v) Nil. (vi) Local. (vii) Unirrigated. (viii) 1 weeding and 1 hoeing. (ix) 30.0″. (x) 17 to 19.10.1958.

2. TREATMENTS :

Same as in expt. no. 57(189) on page 508.

3. DESIGN :

(i) 3^3 partial confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) N.A. (iii) 4. (iv) (a) 24′×10′. (b) 20′×6′. (v) 2′×2′. (v) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1957—1958. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 954 lb./ac. (ii) 230.2 lb./ac. (iii) Main effects of N, P and interaction P×K are highly significant. No other effect is significant. (iv) Av. yield of grain in lb./ac.

	N_0	N_1	N_2	K_0	K_1	K_2	Mean
P_0	731	817	980	924	790	815	843
P_1	784	972	1303	976	1093	991	1020
P_2	809	1097	1091	1017	1079	900	999
Mean	775	962	1125	972	987	902	954
K_0	706	1046	1165				
K_1	929	937	1095				
K_2	689	902	1114				

S.E. of any marginal mean = 38.4 lb./ac.
S.E. of body of any table = 66.4 lb./ac.

Crop :- Marua ***(Kharif).*** **Ref :- Bh. 58, 59(2).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'M'.**

Object :—To study the effect of N, P, K and lime on Marua.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Red laterite. (b) Refer soil analysis, Kanke. (iii) 1st week of July. (iv) (a) 4 ploughings with *desi* plough. (b) Line sowing. (c) N.A. (d) 9″×9″. (e) N.A. (v) N.A. (vi) Local. (vii) Unirrigated. (viii) Hoeing and weeding. (ix) and (x) N.A.

2. TREATMENTS :

4 manurial treatments : M_0=Control (no manure), M_1=3600 lb./ac. of lime, M_2=40 lb./ac. of N as A/S+ 40 lb./ac. of P_2O_5 as Super+40 lb./ac. of K_2O as Mur. Pot. and $M_3=M_2+M_1$
Lime applied in 1958 only. Residual effect of lime studied in subsequent years.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) 14′×20′. (b) 12′×18′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Nil. (iii) Grain yield. (iv) (a) 1958—1960. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

1958

(i) 775.7 lb./ac. (ii) 141.5 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_4
Av. yield	461	749	790	1103

S.E./mean = 63.3 lb./ac.

1959

(i) 609.3 lb./ac. (ii) 111.0 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3
Av. yield	375	422	751	889

S.E./mean = 49.6 lb./ac.

Crop : Marua. **Ref :- Bh. 55(147).**
Site :- Govt. Agri. Farm, Nawadah. **Type 'M'.**

Object :—To find out the optimum dose of N, P and K for Marua crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Sugarcane. (c) N.A. (ii) (a) Loam. (b) N.A. (iii) 4.6.1955/6, 7.7.1955. (iv) (a) N.A. (b) Transplanting. (c) N.A. (d) 12″×8″. (e) 2. (v) Nil. (vi) Local—N.A. (vii) Unirrigated. (viii) Weeding once. (ix) 31.58″. (x) 12, 13.9.1955.

2. TREATMENTS :

Same as in expt. no. 57(189) on page 508.
Date of manuring—4.7.1955.

3. DESIGN :

(i) 3^3 partially confd. (ii) (a) 9 plots/block; 3 blocks/replication. (b) N.A. (iii) 3. (iv) (a) 24′×9′. (b) 20′×6′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Not good. (ii) Nil. (iii) Biomtric observations and grain yield. (iv) (a) 1955—contd. (b) No. (c) Nil. (v) (a) Sabour, Dumka and Pusa. (b) N.A. (vi) Heavy rain in July, 1955. (vii) Originally laid out with 4 replications. 1 replication was defective.

5. RESULTS :

(i) 220 lb./ac. (ii) 87.4 lb./ac. (iii) Main effect of N, interaction P×K and Z component of the interaction N×P×K are highly significant. No other effect is significant. (iv) Av. yield of grain in lb./ac.

	N_0	N_1	N_2	K_0	K_1	K_2	Mean
P_0	161	179	247	141	179	267	196
P_1	156	265	313	227	280	227	245
P_2	134	217	313	275	181	207	221
Mean	150	220	291	214	213	234	220
K_0	126	214	303				
K_1	169	222	250				
K_2	156	224	320				

S.E. of any marginal mean = 16.8 lb./ac.
S.E. of body of any table = 29.1 lb./ac.

Crop :- Marua *(Kharif)*. **Ref :- Bh. 56(236).**
Site :- Govt. Agri. Farm, Nawadah. **Type :- 'M'.**

Object :—To find out the optimum dose of N, P and K for Marua.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Loamy soil. (b) N.A. (iii) 3.6.1956/14.7.1956. (iv) (a) 3 ploughings by *desi* plough. (b) Line planting. (c) 6 srs./ac. (d) 6″×6″. (e) 1 to 2. (v) Nil. (vi) Local. (vii) Unirrigated. (viii) 1 weeding and 1 hoeing. (ix) 31.44″. (x) 16.9.1956.

2. TREATMENTS :

Same as in expt. no. 57(189) on page 508.

3. DESIGN :

(i) 3^3 partial confd. (ii) (a) 9 plots/block, 3 blocks/replication. (b) N.A. (iii) 4. (iv) (a) 24′×10′. (b) 20′×6′. (v) 2′×2′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Helminthosporum was observed. No control measures taken. (iii) Grain yield. (iv) (a) 1955—1956. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 328 lb./ac. (ii) 119.5 lb./ac. (iii) Main effects of N, P and interaction P×K are highly significant. (iv) Av. yield of grain in lb./ac.

	N_0	N_1	N_2	K_0	K_1	K_2	Mean
P_0	233	268	408	296	300	315	304
P_1	261	241	338	245	288	307	280
P_2	331	369	502	436	373	393	401
Mean	275	293	416	326	320	338	328
K_0	315	261	401				
K_1	257	303	401				
K_2	253	315	447				

S.E. of any marginal mean = 19.9 lb./ac.
S.E. of body of any table = 34.5 lb./ac.

Crop :- Marua *(Kharif).* **Ref :- Bh. 54(149).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To find out the optimum dose of N, P and K for Marua.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 15.6.1954/31.7.1954. (iv) (a) 4 ploughings by country plough. (b) Row planting (c) 24.3 srs./ac. (d) Rows 1′ apart. (e) N.A. (v) Nil. (vi) Local (medium). (vii) Irrigated. (viii) 1 weeding and 1 hoeing. (ix) 17.77″. (x) 8.10.1954.

2. TREATMENTS

Same as in expt. no. 57(189) on page 508.

3. DESIGN :

(i) 3^3 confd. (ii) (a) 9 plots/block; 3 blocks/replication. (b) N.A. (iii) 4. (iv) (a) 24′×10′. (b) 20′×6′. (v) 2′×2′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) 1954—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1670 lb./ac. (ii) 377.5 lb./ac. (iii) Only interaction P×K is significant. (iv) Av. yield of grain in lb /ac.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	1493	1641	1851	1622	1618	1746	1662
N_1	1587	1750	1528	1676	1536	1653	1622
N_2	1808	1699	1672	1719	1793	1668	1727
Mean	1629	1697	1684	1672	1649	1689	1670
K_0	1847	1583	1587				
K_1	1571	1738	1637				
K_2	1470	1769	1828				

S.E. of any marginal mean = 62.9 lb./ac.
S E. of body of any table = 109.0 lb./ac.

Crop :- Marua *(Kharif).* **Ref :- Bh. 55(98).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To find out the optimum dose of N, P and K for Marua.

1. BASAL CONDITIONS :

(i) (a) No. (b) Pea. (c) N.A. (ii) (a) and (b) N.A. (iii) 21.6.1955/3.8.1955. (iv) (a) N.A. (b) Transplanting. (c) N.A. (d) 12″×12″. (e) 2. (v) Nil. (vi) Local (medium). (vii) Unirrigated. (viii) 2 weedings and 1 hoeing. (ix) 32.31″. (x) 4.10.1955.

2. TREATMENTS :

Same as in expt. no. 57(189) on page 508.

3. DESIGN :

(i) 3^3 partially confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) N.A. (iii) 4. (iv) (a) 24′×10′. (b) 20′×6′. (v) 2′×2′. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) Nil. (iii) Date of flowering, no. of tillers, weight of plants and grain yield. (iv) (a) 1954—contd. (b) No. (c) Nil. (v) (a) Pusa, Dumka and Nawadah. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 186 lb./ac. (ii) 95.5 lb./ac. (iii) Only the main effects of N and P are highly significant. (iv) Av. yield of grain in lb./ac

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	102	152	146	148	142	110	133
N_1	158	181	237	206	155	214	192
N_2	165	288	245	215	232	252	233
Mean	142	207	209	190	176	192	186
K_0	169	186	214				
K_1	134	202	193				
K_2	122	232	221				

S.E. of any marginal mean = 15.9 lb./ac.
S.E. of body of any table = 27.6 lb./ac.

Crop :- Marua *(Kharif)*. **Ref :- Bh. 56(255).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To find out the optimum dose of N, P and K for Marua.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 2.6.1956/24.7.1956. (iv) (a) 4 ploughings by *desi* plough. (b) Row planting. (c) 24.3 srs./ac. (d) 9″×9″. (e) 1. (v) Nil. (vi) CO—6 (local). (vii) Irrigated. (viii) 1 weeding and 1 hoeing. (ix) 41.80″. (x) 29.10.1956.

2. TREATMENTS :

Same as in expt. no. 57(189) on page 508.

3. DESIGN :

(i) 3^3 partially confd. (ii) (a) 3 blocks/replication ; 9 plots/block. (b) N.A. (iii) 4. (iv) (a) 24′×7½′. (b) 22½′×6′. (v) 9″×9″ alround. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield and tiller no. (iv) (a) 1956—N.A. (b) and (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 438 lb./ac. (ii) 153.6 lb./ac. (iii) Main effect of N is highly significant. No other effect is significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	439	355	332	356	422	346	375
N_1	435	422	383	427	387	427	414
N_2	527	495	549	466	580	526	524
Mean	467	424	421	416	463	433	438
K_0	459	400	390				
K_1	461	435	493				
K_2	482	437	380				

S.E. of any marginal mean = 25.6 lb./ac.
S.E. of body of any table = 44.3 lb./ac.

Crop :- Marua. **Ref :- Bh. 55(7)**

Site :- Agri. Res. Instt., Kanke. **Type :- 'C'.**

Object :—To see the utility of transplanting as compared to broadcasting.

1. BASAL CONDITIONS :

(i) (a) Paddy—Fallow—*Marua*—Fallow—Paddy. (b) and (c) Nil. (ii) (a) Clayey loam. (b) Refer soil analysis. Kanke. (iii) 28.6.1955/10.8.1955.(Ist) and 27.8.1955(2nd). (iv) (a) Preparation of land by spade. (b) As per treatments. (c) 5 srs./ac. (d) 4″×4″. (e) N.A. (v) Nil. (vi) Local. (vii) Unirrigated. (viii) Nil. (ix) 30.93″. (x) 15.11.1955.

2. TREATMENTS :

3 methods of sowing and transplanting : M_1=Broadcasting, M_2=Ist transplanting and M_3=2nd transplanting.

Method of sowing and transplanting :—

Sowing in seed bed and broadcasting was done in Ist week of June. Ist transplanting done 30 days after sowing. For 2nd, 30 days old seedings were transplanted in another seed bed with 4″×4″ spacing and they were retransplanted after 15 days with 8″×8″ spacing.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) 24′×10′. (b) 20′×6′. (v) 2′×2′ (vi) Yes.

. GENERAL :

(i) Fair. (ii) Nil. (iii) Yield of grain. (iv) 1955—N.A. (b) No. (c) Nil. (v) to (vii) Nil.

4. RESULTS :

(i) 581 lb./ac. (ii) 117.6 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3
Av. yield	747	747	249

S.E./mean = 48.0 lb./ac.

Crop :- Marua. **Ref :- Bh. 56(14).**

Site :- Bot. Sub-Stn., Kanke. **Type :- 'C'.**

Object :—To see the utility of transplanting for Marua crop.

1. BASAL CONDITIONS :

(i) (a) Paddy—Marua. (b) Paddy. (c) 30 lb./ac. of N+30 lb./ac. of P_2O_5. (ii) (a) Sandy loam. (b) N.A. (iii) 11.6.1956/23.7.1956. (iv) (a) N.A. (b) As per treatments. (c) 3 srs./ac. (d) and (e) As per treatments. (v) Nil. (vi) Local. (vii) Unirrigated. (viii) 1 weeding by hand 3 weeks after transplanting. (ix) 32.04″. (x) 12.10.1956 and 23.10.1956.

2. TREATMENTS :

3 methods of sowing : M_1=Broadcasting, M_2=Transplanting with 6″×6″ spacing (2 seedlings/hole) and M_3=Transplanting with 9″×9″ spacing (3 seedlings/hole).

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 7. (iv) (a) 20′×8′. (b) 18′×6′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Not good. (ii) Nil. (iii) Measurement of height of plants, tiller count, straw and grain yield. (iv) (a) N.A. (b) No. (c) Nil. (v) (a) Saharsa and Nawadah. (b) N.A. (vi) and (vii) Nil.

RESULTS :

(i) 295.6 lb./ac. (ii) 149.4 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3
Av yield	503	207	176

S.E./mean = 56.5 lb./ac.

Crop :- Marua. **Ref :- Bh. 57(3).**

Site :- Bot. Sub-Stn., Kanke. **Type :- 'C'.**

Object :—To see the utility of transplanting for Marua crop.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 27.6.1957/5, 6.8.1957. (iv) (a) N.A. (b) As per treatments. (c) 3 srs./ac. (d) and (e) As per treatments. (v) N.A. (vi) Local (early). (vii) Unirrigated. (viii) 1 weeding and 1 hoeing. (ix) 40.06". (x) 12, 19.10.1957.

2. TREATMENTS :

3 methods of sowing : M_1=Broadcasting, M_2=Transplanting at 6"×6" spacing (2 seedlings/hole). and M_3=Transplanting at 9"×9" spacing (2 seedlings/hole).

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 8. (iv) (a) 21'×9'. (b) 18'×6'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Slight attack of leaf-spot. (iii) Plant height. (iv) (a) Yes. (b) No. (c) Nil. (v) (a) Sabour. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 644.3 lb./ac. (ii) 410.8 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3
Av. yield	766	645	522

S.E./mean = 145.2 lb./ac.

Crop :- Marua *(Kharif)*. **Ref :- Bh. 56(181).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'C'.**

Object :—To see the utility of transplanting of Marua crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Wheat. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Kanke. (iii) 11.6.1956/23.7.1956. (iv) 2 ploughings by *desi* plough. (b) As per treatments. (c) 3 srs./ac. (d) As per treatments. (e) 2. (v) Nil. (vi) Local. (vii) Unirrigated. (viii) Nil. (ix) Nil. (x) 12.10.1956 to 23.10.1956.

2. TREATMENTS :

3 methods of sowing : M_1=Broadcosting, M_2=Transplanting with 6"×6" spacing and M_3=Transplanting with 9"×9" spacing.

3. DESIGN :

(i) R.B D. (ii) (a) 3. (b) N.A. (iii) 7. (iv) (a) 20′×8′. (b) 18′×6′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Poor. (b) Nil. (iii) Straw weight and grain yield, (iv) (a) 1956—1957. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) Nil. (vii) Originally laid with 8 replications, 1 was destroyed.

5. RESULTS :

(i) 296.3 lb./ac. (ii) 149.3 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yieild of grain in lb./ac.

Treatment	M_1	M_2	M_3
Av. yield	504	207	178

S.E./mean = 56.4 lb./ac.

Crop :- Marua ***(Kharif)*****.** **Ref :- Bh. 57(163).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'C'.**

Object : –To see the utility of transplanting for Marua.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Kanke. (iii) 27.6 1957/5, 6.8.1957. (iv) (a) 2 ploughings. (b) As per treatments. (c) 3 srs./ac. (d) As per treatments. (e) 2. (v) Nil (vi) Local. (vii) Unirrigated. (viii) 1 weeding. (ix) N.A. (x) 12 to 19.10.1957.

2. TREATMENTS :

Same as in expt. no. 56(181) on page 515.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 8. (iv) (a) 21′×9′. (b) 18′×6′. (v) 1½′×1½′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) 1956—1957. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 608.5 lb./ac (ii) 348.0 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3
Av. yield	776	553	497

S.E./mean = 123.1 lb./ac.

Crop :- Marua. **Ref :- Bh. 55(146).**

Site :- Govt. Agri. Farm, Nawadah. **Type :- 'C'.**

Object :—To study the effect of broadcasting *vs.* transplanting on Marura.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Rahar.* (c) Nil. (ii) (a) Loamy. (b) N.A. (iii) 4.6.1955/1 and 20.7.1955. (iv) (a) 5 to 6 *desi* ploughings. (b) As per treatments. (c) 5 srs./ac. (d) As per treatments. (e) N.A. (v) 30 md./ac. of Farm compost mixed with the soil. (vi) Local. (vii) Unirrigated. (viii) Weeding twice. (ix) 34.21″. (x) 9.11.1955.

2. TREATMENTS

Same as in expt. no. 55(7) on page 514.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) $22\frac{1}{2}' \times 30'$. (iii) 6. (iv) (a) $22\frac{1}{2}' \times 10'$. (b) $20' \times 6$. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Not good. (ii) Nil. (iii) Biometric observations and grain yield. (iv) (a) 1955—N.A. (b) No. (c) Nil. (v) (a) Pusa, Kanke and Sabour. (b) N.A. (vi) Heavy rain in July, 1955. (vii) Nil.

5. RESULTS :

(i) 214.3 lb./ac. (ii) 83.5 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3
Av. yield	412	136	95

S.E./mean = 34.1 lb./ac.

Crop :- Marua ***(Kharif).*** **Ref :- Bh. 56(157).**

Site :- Govt. Agri. Farm, Nawadah. **Type :- 'C'.**

Object :—To see the utility of transplanting Marua crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Wheat. (c) 25 lb./ac. of N as A/S+25 lb./ac. of P_2O_5 as Super. (ii) (a) and (b) N.A. (iii) 3.6.1956/6.7.1956. (iv) (a) 2 ploughings. (b) As per treatments. (c) 6 lb./ac. (d) As per treatments. (e) 2 (v) Nil. (vi) Local (late). (viii) Unirrigated. (viii) 1 weeding. (ix) 36.61". (x) 29.8.1956.

2. TREATMENTS :

Same as in expt. no. 56(181) on page 515.

3. DESIGN :

(i) R B.D. (ii) (a) 3. (b) N.A. (iii) 8. (iv) (a) $21' \times 9'$. (b) $18' \times 6'$. (v) $1\frac{1}{2} \times 1\frac{1}{2}'$. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) and (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 664.5 lb./ac. (ii) 153.3 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3
Av. yield	504	753	737

S.E./mean = 54.2 lb./ac.

Crop :- Marua ***(Kharif).*** **Ref :- Bh. 57 (160).**

Site :- Govt. Agri. Farm, Nawadah. **Type :- 'C'.**

Object :—To find out the best method of growing Marua.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Sugarcane. (c) 75 lb./ac. of N as A/S+75 lb./ac. of P_2O_5 as Super. (ii) (a) and (b) N.A. (iii) 4.7.1957. (iv) (a) 2 ploughings. (b) As per treatments. (c) 6 lb./ac. (d) As per treatments. (e) 3. (v) 20 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super. (vi) Local. (vii) Unirrigated. (viii) Nil. (ix) 13". (x) 30.8.1957.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 56(181) on page 515.

4. GENERAL :

(i) Poor. (ii) Nil. (iii) Grain yield. (iv) (a) 1956—1957. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 195·2 lb./ac. (ii) 100.8 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3
Av. yield	258	165	162

S.E./mean = 35.6 lb./ac.

Crop :- Marua *(Kharif)*. **Ref :- Bh. 54(150).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'CM'.**

Object :—To find out the effect of manuring, with different number of seedlings and spacing on Marua.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 15.6.1954/2.8.1954. (iv) (a) 4 ploughings by country plough. (b) Planted in rows. (c) 24.3 srs./ac. (d) and (e) As per treatments. (v) Nil. (vi) CO—7. (vii) Irrigated. (viii) 1 weeding, 1 hoeing and 1 earthing up. (ix) 40.0". (x) 6.10.1954.

2. TREATMENTS :

Main-plot treatments :

2 manurial treatments : M_0=No manure and M_1=100 md./ac. of F.Y.M.

Sub-plot treatments :

3 spacings : $S_1=6'' \times 6''$, $S_2=9'' \times 9''$ and $S_3=12'' \times 12''$.

Sub-Sub-plot treatments :

No. of seedlings/hole : D_1=1, D_2=2 and D_3=3 seedlings/hole.

3. DESIGN :

(i) Split-Split plot. (ii) (a) 2 sub-sub-plots/Sub-plot ; 3 sub-plots/main-plot ; 2 main-plots/replication. (b) N.A. (iii) 6. (iv) (a) $18' \times 12'$. (b) $12' \times 6'$. (v) $3' \times 3'$. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (ii) Grain yield. (iv) (a) 1954—1956. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1196 lb./ac. (ii) (a) 165.4 lb./ac. (b) 534.6 lb./ac. (c) 355.1 lb./ac. (iii) Main effect of S is highly significant. Interaction D×M is significant. No other effect is significant.

	S_1	S_2	S_3	D_1	D_2	D_3	Mean
M_0	1486	998	1046	1076	1322	1132	1177
M_1	1465	1344	838	1283	1080	1283	1216
Mean	1476	1171	942	1180	1201	1208	1196
D_1	1432	1186	920				
D_2	1588	1121	894				
D_3	1407	1206	1011				

S.E. of difference of two

1. M marginal means = 31.8 lb./ac.
2. S marginal means = 126.0 lb./ac.
3. D marginal means = 83.7 lb./ac.
4. M means at the same level of S = 148.9 lb./ac.
5. S means at the same level of M = 178.2 lb./ac.
6. M means at the same level of D = 101.7 lb./ac.
7. D means at the same level of M = 118.4 lb./ac.
8. S means at the same level of D = 172.9 lb./ac.
9. D means at the same level of S = 145.0 lb./ac.

Crop :- Marua *(Kharif).* **Ref :- Bh. 55(257).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'CM'.**

Object :—To find out the effect of manuring with different number of seedlings and spacing on Marua.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 26.6.1955/26.7.1955. (iv) (a) 4 ploughings by country plough followed by puddling. (b) Line transplanting. (c) 24.3 srs./ac. (d) and (e) As per treatments. (v) Nil. (vi) CO—7. (vii) Irrigated. (viii) 1 weeding, 1 hoeing and earthing up. (ix) 14.0". (x) 6.10.1955.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(150) on page 518.

4. GENERAL:

(i) Poor. (ii) Nil. (iii) Grain yield. (iv) (a) 1954—1956. (b) No. (c) Nil. (v) (a) and (b) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 280 lb./ac (ii) (a) 412.2 lb./ac. (b) 151.2 lb./ac. (c) 149.0 lb./ac. (iii) Main effect of S is highly significant. Interactions P×S, P×M×S are significant. No other effect is significant. (iv) Av. yield of grain in lb./ac.

	S_1	S_2	S_3	D_1	D_2	D_3	Mean
M_0	182	144	146	139	150	183	157
M_1	510	378	307	363	420	413	399
Mean	346	261	227	251	285	298	280
D_1	399	211	144				
D_2	277	287	292				
D_3	362	286	245				

S.E. of difference of two

1. M marginal means = 79.3 lb./ac.
2. S marginal means = 35.6 lb./ac.
3. D marginal means = 35.1 lb./ac.
4. M means at the same level of S = 89.3 lb./ac.
5. S means at the same level of M = 50.4 lb./ac.
6. M means at the same level of D = 89.1 lb./ac.
7. D means at the same level of M = 49.7 lb./ac.
8. S means at the same level of D = 61.1 lb./ac.
9. D means at the same level of S = 60.8 lb./ac.

Crop :- Marua *(Kharif)* **Ref :-Bh. 56(256).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'CM'.**

Object :—To find out the effect of manuring with different number of seedlings and spacing on Marua.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 2.6.1956/31.7.1956. (iv) (a) 3 ploughings by country plough. (b) Planting in lines. (c) 24.3 srs./ac. (d) and (e) As per treatments. (v) Nil. (vi) CO—7. (vii) Irrigated. (viii) 1 weeding and 1 earthing up. (ix) 41.80". (x) 8.10.1956.

2. TREATMENTS :

Same as in expt. no. 54 (150) on page 518.

3. DESIGN :

(i) Split—split plot. (ii) (a) 2 main plots/replication ; 3 sub-plots/main plot ; 2 sub.sub-plots/sub-plot. (b) N.A. (iii) 6. (iv) (a) 23'×5'. (b) 21'×3'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) Nil. (iii) Grain yield. (iv) (a) 1954—1956. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 313 lb./ac. (ii) (a) 265.7 lb./ac. (b) 192.2 lb./ac. (c) 145.6 lb /ac. (iii) Main effects of M and S are highly significant. Interaction S × D, M × S × D are significant. No other effect is significant. (iv) Av. yield of grain in lb./ac.

	S_1	S_2	S_3	D_1	D_2	D_3	Mean
M_0	205	156	100	143	143	173	154
M_1	600	497	321	438	456	524	473
Mean	403	324	211	291	300	349	313
D_1	397	285	190				
D_2	372	259	269				
D_3	439	436	172				

S.E. of difference of two

1. M marginal means = 51.1 lb./ac.
2. S marginal means = 45.3 lb./ac.
3. D marginal means = 34.3 lb./ac.
4. M means at the same level of S = 73.1 lb./ac.
5. S means at the same level of M = 64.1 lb./ac.
6. M means at the same level of D = 64.7 lb./ac.
7. D means at the same level of M = 48.5 lb./ac.
8. S means at the same level of D = 66.3 lb./ac.
9. D means at the same level of S = 59.4 lb./ac.

EXPERIMENTS OF FIELD EXPERIMENTAL SPECIALIST ON MARUA

Object :—To find suitable manurial schedules for Marua for various tracts of Bihar.

ZONE I

TREATMENTS :

All combinations of (1), (2) and (3)

(1) 3 levels of N as A/S : $N_0=0$, $N_1=25$ and $N_2=50$ lb./ac.
(2) 3 levels of P_2O_5 as Super : $P_0=0$, $P_1=20$ and $P_2=40$ lb./ac.
(3) 3 levels of K_2O as Mur. Pot. : $K_0=0$, $K_1=20$ and $K_2=40$ lb./ac.

UNIRRIGATED TRIALS

Serial no. : 1. **Block (Dist.):** Chas (Dhanbad). **Soil type :** Loam. **Years :** 1957 and 1958.

RESULTS :

(i) 634 lb./ac. (ii) 104.1 lb./ac. (iii) Effects of N, P and interaction N × P are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	302	530	613	457	503	485	482
N_1	585	640	631	585	649	622	619
N_2	777	832	795	750	841	814	801
Mean	555	667	680	597	664	640	634
K_0	539	640	613				
K_1	549	695	750				
K_2	576	667	677				

Serial no. : 2. **Block (Dist.):** Rajganj (Dhanbad). **Soil type :** Sandy. **Years : 1956 and 1959**

RESULTS :

(i) 434 lb./ac. (ii) 65.3 lb./ac. (iii) Effects of N and P are highly significant. Effect of K is significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	347	366	439	366	375	411	384
N_1	402	475	512	421	466	503	463
N_2	357	475	530	421	503	439	454
Mean	369	439	494	403	448	451	434
K_0	320	402	485				
K_1	393	448	503				
K_2	393	466	494				

Serial no. : 3. **Block (Dist.) :** Chauparan (Hazaribagh). **Soil type :** Sandy. **Years :** 1956, 57 and 1959.

RESULTS :

(i) 1226 lb./ac. (ii) 303.6 lb./ac. (iii) Effects of N and P are highly significant. (iv) Av yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	905	999	1074	850	984	1144	993
N_1	1112	1238	1301	1050	1226	1375	1217
N_2	1544	1391	1473	1235	1438	1736	1469
Mean	1187	1209	1283	1045	1216	1418	1226
P_0	921	1070	1144				
P_1	1160	1211	1277				
P_2	1481	1347	1427				

Serial no. : 4. **Block (Dist) :** Giridih (Hazaribagh). **Soil type :** Sandy. **Years :** 1956 to 1959.

RESULTS :

(i) 1052 lb./ac. (ii) 129.8 lb /ac. (iii) Effects of N, P and K and interaction N×P are highly significant. Interaction P×K is significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	718	983	1038	805	951	983	913
N_1	987	1262	1184	1097	1179	1156	1144
N_2	1106	1170	1024	1006	1115	1179	1100
Mean	937	1138	1082	969	1082	1106	1052
K_0	791	1051	1065				
K_1	1065	1097	1083				
K_2	955	1266	1097				

Serial no. : 5. **Block (Dist.) :** Ishribazar (Hazaribagh). **Soil type :** Sandy. **Years :** 1956, 1957 and 1959.

RESULTS :

(i) 1191 lb./ac. (ii) 272.9 lb./ac. (iii) Effects of N and P are higly significant. Effect of K is significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	639	948	944	815	780	936	844
N_1	1089	1399	1363	1195	1379	1277	1284
N_2	1250	1461	1626	1328	1485	1524	1446
Mean	993	1269	1311	1113	1215	1246	1191
K_0	944	1215	1179				
K_1	1066	1226	1352				
K_2	968	1367	1403				

Serial no. : 6. **Block (Dist.) :** Ghaghra (Ranchi). **Soil type :** Sandy. **Years :** 1956 to 1959.

RESULTS :

(i) 1006 lb./ac. (ii) 240.3 lb./ac. (iii) Effect of N is highly significant. Interaction N×K is significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	837	795	919	830	946	775	850
N_1	1008	1056	1131	1083	981	1131	1065
N_2	1131	1035	1138	933	1220	1152	1101
Mean	992	962	1063	949	1049	1019	1006
K_0	919	919	1008				
K_1	1077	939	1131				
K_2	981	1029	1049				

Serial no. : 7. **Block (Dist.) :** Gumla (Ranchi). **Soil type :** Sandy. **Years :** 1956 to 1959.

RESULTS :

(i) 1408 lb./ac. (ii) 153.3 lb./ac. (iii) Effects of N, P and K are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	966	1155	1268	1070	1195	1124	1130
N_1	1243	1582	1630	1514	1527	1414	1485
N_2	1399	1673	1752	1621	1633	1569	1608
Mean	1203	1470	1550	1402	1452	1369	1408
K_0	1207	1469	1530				
K_1	1243	1518	1594				
K_2	1158	1423	1527				

Serial no. : 8. **Block (Dist.)** : Khunti (Ranchi). **Soil type** : Sandy. **Years** : 1956 to 1958.

RESULTS :

(i) 1374 lb./ac. (ii) 94.9 lb./ac. (iii) Effects of N, P and interaction N×P are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	933	1298	1316	1161	1188	1198	1182
N_1	1298	1454	1481	1403	1426	1403	1411
N_2	1440	1518	1627	1531	1518	1536	1528
Mean	1224	1423	1475	1365	1377	1379	1374
K_0	1225	1426	1444				
K_1	1221	1412	1499				
K_2	1225	1431	1481				

Serial no. : 9. **Block (Dist.)** : Kolebira (Ranchi). **Soil type** : Sandy. **Years** : 1956 to 1959.

RESULTS :

(i) 874 lb./ac. (ii) 136.7 lb./ac. (iii) Effects of N, P and K are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	539	661	817	613	680	725	672
N_1	701	920	990	801	917	893	870
N_2	923	1091	1225	1048	1118	1073	1080
Mean	721	891	1011	821	905	897	874
K_0	667	826	969				
K_1	747	929	1039				
K_2	750	917	1024				

Serial no. : 10. **Block (Dist.)** : Kuru (Ranchi). **Soil type** : Sandy. **Years** : 1957 to 1959.

RESULTS :

(i) 1218 lb./ac. (ii) 278.1 lb./ac. (iii) Effects of N and P are highly significant. Effects of K and interaction P×K are significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	667	969	942	768	919	891	859
N_1	1033	1207	1335	1120	1184	1271	1192
N_2	1435	1678	1696	1499	1618	1691	1603
Mean	1045	1285	1324	1129	1240	1284	1218
K_0	1010	1239	1138				
K_1	1024	1367	1330				
K_2	1102	1248	1504				

Serial no. : 11. **Block (Dist.) :** Lohardega (Ranchi). **Soil type :** Sandy. **Years :** 1956 to 1958.

RESULTS :

(i) 858 lb./ac. (ii) 110.7 lb./ac. (iii) Effects of N, P and K are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	393	562	800	549	590	617	585
N_1	663	873	1001	787	827	923	846
N_2	974	1106	1353	1088	1170	1175	1144
Mean	677	847	1051	808	862	905	858
K_0	668	763	992				
K_1	645	864	1079				
K_2	718	914	1083				

Serial no. : 12. **Block (Dist.) :** Mander (Ranchi). **Soil type :** Sandy. **Years :** 1957 to 1959.

RESULTS :

(i) 760 lb./ac. (ii) 111.1 lb./ac. (iii) Effects of N, P and interaction N×P are highly significant. (iv) Av. yield of grain in lb /ac.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	480	622	649	590	581	581	584
N_1	658	782	773	718	736	759	738
N_2	914	901	1056	933	965	974	957
Mean	684	768	826	747	761	771	760
K_0	667	768	805				
K_1	695	759	827				
K_2	690	777	846				

ZONE II

TREATMENTS :

All combinations of (1), (2) and (3)

(1) 3 Levels of N as A/S : $N_0=0$, $N_1=30$ and $N_2=60$ lb./ac.
(2) 3 Levels of P_2O_5 as Super : $P_0=0$, $P_1=25$ and $P_2=50$ lb./ac.
(3) 3 Levels of K_2O_5 as Mur. Pot. : $K_0=0$, $K_1=20$ and $K_2=40$ lb./ac.

I. UNIRRIGATED TRIALS

Serial no. : 1. **Block (Dist.) :** Jainagar (Darbhanga). **Soil type :** Sandy. **Years :** 1958 to 1959.

RESULTS :

(i) 1175 lb./ac. (ii) 197.5 lb./ac. (iii) Effects of N and P are highly significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	912	994	1008	747	953	1214	971
N_1	1124	1200	1193	919	1275	1323	1172
N_2	1364	1358	1426	1083	1371	1694	1383
Mean	1133	1184	1209	916	1200	1410	1175
P_0	898	898	953				
P_1	1118	1255	1227				
P_2	1385	1399	1447				

Serial no. : 2. **Block (Dist.)** : Kaluahi (Darbhanga). **Soil type** : Sandy. **Years :** 1957 and 1959.

RESULTS :

(i) 1637 lb./ac. (ii) 139.1 lb./ac. (iii) Effects of N, P, K and interaction N×P are highly significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	1364	1474	1447	1646	1515	1124	1428
N_1	1522	1652	1687	1742	1611	1508	1620
N_2	1803	1879	1906	1961	1865	1762	1863
Mean	1563	1668	1680	1783	1664	1465	1637
P_0	1406	1481	1508				
P_1	1556	1714	1721				
P_2	1728	1810	1810				

Serial no. : 3. **Block (Dist.)** : Khajouli (Darbhanga). **Soil type** : Sandy loam. **Years** : 1958 and 1959.

RESULTS :

(i) 1896 lb./ac. (ii) 160.8 lb./ac. (iii) Effects of N, P, K and interaction N×P are highly significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	1515	1714	1673	1289	1707	1906	1634
N_1	1810	1975	1995	1824	1968	1988	1927
N_2	2132	2084	2167	2016	2091	2276	2128
Mean	1819	1924	1945	1710	1922	2057	1896
P_0	1659	1700	1769				
P_1	1844	1982	1940				
P_2	1954	2091	2126				

Serial no. : 4. **Block** (Dist.) : Khutauna (Darbhanga). **Soil type :** Loam. **Years** :1957 to 1959.

RESULTS :

(i) 1389 lb./ac. (ii) 221.4 lb./ac. (iii) Effect of P is highly significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	1298	1367	1371	1211	1376	1449	1345
N_1	1458	1403	1426	1371	1495	1422	1429
N_2	1371	1371	1435	1298	1435	1444	1392
Mean	1376	1380	1411	1293	1435	1438	1389
P_0	1271	1321	1289				
P_1	1486	1385	1435				
P_2	1371	1435	1508				

Serial no. : 5. **Block** (Dist.) : Supaul (Saharsa). **Soil type :** Loam. **Years :** 1957 to 1959

RESULTS :

(i) 950 lb./ac. (ii) 133.7 lb./ac. (iii) Effects of N, P and interaction N×K are highly significant. Interaction N×P is significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	709	859	891	841	759	859	820
N_1	763	942	1161	850	1024	992	955
N_2	914	1088	1220	1033	1124	1065	1074
Mean	795	963	1091	908	969	972	950
K_0	777	946	1001				
K_1	795	996	1115				
K_2	814	946	1156				

Crop :- Cheena. **Ref :-Bh. 54 (46)**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To study the effect of A/S and Triple Super on Cheena yield.

1. BASAL CONDITIONS :

(i) and (ii) N.A. (iii) 13.2.1954. (iv) (a) 3 ploughings by country plough followed by beaming. (b) Sown behind the hand hoe. (c) 4 srs./ac. (d) Row to row 1′. (e) —. (v) Nil. (vi) *Ramcheena—Panicum nitiaceum* (early). (vii) Irrigated. (viii) 2 weedings and one hoeing. (ix) 0.18″. (x) 5.5.1954.

2. TREATMENTS :

All combinations of (1) and (2).

(1) 3 levels of N as A/S : No=0, N_1=20 and N_2=40 lb./ac.

(2) 3 levels of P_2O_5 as triple super : P_0=0, P_1=15 and P_2=30 lb./ac.

3. DESIGN :

(i) R. B. D. (ii) (a) 9. (b) N. A. (iii) 4. (iv) (a) 18′×4′. (b) 18′×3′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Average. (ii) Nil. (iii) Biometric observations and grain yield. (iv) (a) 1954—N.A. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) Nil. (vii) Yield calculated on the 3 central rows of each plot.

5 RESULTS :

(i) 394 lb./ac. (ii) 201.6 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	Mean
N_0	384	429	365	393
N_1	378	378	454	403
N_2	303	353	504	387
Mean	355	387	441	394

S. E. of N or P marginal mean = 58.2 lb./ac.
S. E. of body of table = 100.8 lb./ac.

Crop :- Cheena. **Ref :- Bh. 54(47).**
Site :- Agri. Res. Instt., Sabour. **Type :- 'C'.**

Object :—To determine the optimum seedrate for Cheena.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) and (b) N.A. (iii) 13.2.1954. (iv) (a) 3 ploughings by country plough followed by beaming. (b) Sown behind the hand hoe. (c) As per treatments. (d) Between rows 1′. (e) —. (v) Nil. (vi) *Shyam cheena* (early). (vii) Irrigated. (viii) 2 weedings and 1 hoeing, (ix) 0.18″. (x) 3.5.1954.

2. TREATMENTS :

3 seed rates : R_1=2.6, R_2=4 and R_3=5.2 srs./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 4. (iv) (a) 18′×4′. (b) 18′×3′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Average. (ii) Nil. (iii) Biometric observations and grain yield. (iv) (a) 1953—contd. (b) No. (c) Nil. (v) (a) and (b) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 399 lb./ac. (ii) 146.0 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	R_1	R_2	R_3
Av. yield	340	454	403

S.E./mean = 73.0 lb./ac.

Crop :- Gundli *(Kharif)*. **Ref :- Bh. 57(45).**
Site :- Agri. Res. Instt., Kanke. **Type :- 'M'.**

Object :—To find out the effects of N, P and K at different levels on the yield of Gundli.

1. BASAL CONDITIONS

(i) (a) Nil. (b) Jowar. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Kanke. (iii) 5.7.1957. (iv) (a) 2 ploughings and beamings. (b) Behind the plough. (c) 15 srs./ac. (d) Row to row 18″. (e) —. (v) Nil. (vi) Local. (vii) Unirrigated. (viii) 1 weeding on 16.8.1957. (ix) 27.3″. (x) 4.9.1957 to 6.9.1957.

2. TREATMENTS :

All combinations of (1), (2) and (3).

(1) 3 levels of N as A/S : $N_0=0$, $N_1=20$ and $N_2=40$ lb./ac.
(2) 3 levels of P as Super : $P_0=0$, $P_1=20$ and $P_2=40$ lb./ac.
(3) 3 levels of K as Mur.Pot. $K_0=0$. $K_1=20$ and $K_2=40$ lb./ac.

3. DESIGN :

(i) 3^3 partially confd. (ii) (a) 9. (b) 173′×32′. (iii) 2. (iv) (a) 32′×17′. (b) 30½′×15½′. (v) 9″×9″. (vi) Yes.

4. GENERAL :

(i) No lodging. (ii) Nil. (iii) Grain yield. (iv) (a) and (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 488 lb./ac. (ii) 86.7 lb./ac. (iii) Main effect of K is significant and effects of N and P are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	296	363	438	328	361	409	366
N_1	442	454	521	442	500	476	472
N_2	539	650	687	543	630	701	626
Mean	426	489	549	438	497	529	488
K_0	393	444	476				
K_1	403	513	575				
K_2	482	509	596				

S.E. of any marginal mean = 20.4 lb./ac.
S.E. of body of any table = 35.4 lb./ac.

Crop :- Gundli *(Kharif)*. **Ref :- Bh. 58(80).**
Site :- Agri. Res. Instt., Kanke. **Type 'M'.**

Object :—To find the effect of N, P and K at different levels on the yield of Gundli.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Jowar*. (c) Nil. (ii) (a) Sandy reddish (laterite soil). (b) N.A. (iii) 29, 30.6.1958. (iv) (a) 3 ploughings. (b) Behind the plough. (c) 15 srs./ac. (d) Row to row 10″. (e) —. (v) Nil. (vi) Local. (vi) Nil. (viii) 1 weeding. (ix) 29.5″. (x) 6,7.9.1958.

2. TREATMENTS :

Same as in expt. no. 57(45) above

3. DESIGN :

(i) 3^3 partially confd. (ii) (a) 9. (b) N.A. (iii) 2. (iv) (a) 61′×10′. (b) 60′×9′. (v) 6″×6″. (vi) Yes.

4. GENERAL :

(i) Good except attack of *Gundli Gall*. (ii) Attack of *Gundli Gall*. No control measures taken. (iii) Grain yield. (iv) (a) 1957—1959. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 786 lb./ac. (ii) 97.5 lb./ac. (iii) Main effects of N, P, K, and interaction N×P are highly significant. Interaction P×K is significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	446	574	685	530	579	597	569
N_1	638	761	913	764	749	799	771
N_2	788	913	1358	880	1060	1117	1019
Mean	624	749	985	725	796	838	786
K_0	607	720	847				
K_1	617	788	982				
K_2	644	741	1128				

S.E. of any marginal mean = 23.0 lb./ac.
S.E. of body of any table = 39.8 lb./ac.

Crop :- Gundli *(Kharif)*. **Ref :- Bh. 59(37).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'M'.**

Object :—To find out the effect of N, P and K at different levels on the yield of Gundli.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Jowar.* (c) 40 lb./ac. of N as A/S+30 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy reddish (laterite soil). (b) Refer soil analysis, Kanke. (iii) 16, 20.6.1959—N.A. (iv) (a) 2 ploughings and levelling. (b) Behind the plough. (c) 15 srs./ac. (d) Row to row 10″. (e) —. (v) Nil. (vi) Local. (vii) and (viii) Nil. (ix) 25.6″. (x) 29, 31.8.1959.

2. TREATMENTS :

Same as in expt. no. 57(45) on page 527.

3. DESIGN :

(i) 3^3 partially contd. (ii) (a) 9. (b) N.A. (iii) 2. (iv) (a) 40′×14′. (b) 39′×13′. (v) 6″×6″. (vi) Yes.

4. GENERAL :

(i) Good, except attack of Gundli gall. (ii) Attack of Gundli Gall—No measures taken. (iii) Grain yield. (iv) (a) 1957—1959. (b) No. (c) Nil. (v) (a) and (b) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 475 lb./ac. (ii) 33.7 lb./ac. (iii) Main effects of N, P and interaction N×P are highly significant while interaction P×K is significant. Av. yield of grain in lb./ac.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	254	318	388	306	319	335	320
N_1	467	502	537	570	494	502	502
N_2	510	584	713	578	602	628	602
Mean	410	468	546	465	472	488	475
K_0	405	484	505				
K_1	413	450	552				
K_2	413	470	581				

S.E. of any marginal mean = 7.9 lb./ac.
S.E. of body of any table = 13.8 lb./ac.

Crop :- Gundli *(Kharif)*. **Ref :- Bh. 58, 59(3).**
Site :- Agri. Res. Instt., Kanke. **Type :- 'M'.**

Object :—To study the effects of N, P, K and lime on Gundli.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Red laterite. (b) Refer soil analysis, Kanke, (iii) 2nd week of June. (iv) (a) 4 ploughings with *desi* plough. (b) Line sowing. (c) N.A. (d) 1′ between rows. (e) N.A. (v) N.A. (vi) Local. (vii) Unirrigated. (viii) Hoeing and weeding. (ix) N.A. (x) 2nd week of August.

2. TREATMENTS :

4 manurial treatments : M_0=Control (no manure), M_1=3600 lb./ac. of lime, M_2=40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super+40 lb./ac. of K_2O as Mur. Pot. and M_3=M_2 +3600 lb./ac. of lime.

Lime applied in 1958 only. Residual effect of lime studied in subsequent years.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) 14′×20′. (b) 12′×18′. (v) 1′×1′. (vi) Yes.

4. GENERAL

(i) N.A. (ii) Nil. (iii) Grain yield. (iv) (a) 1958—1960. (b) Yes. (c) Nil. (v) to (vii) Nil.

1958

5. RESULTS :

(i) 397.2 lb./ac. (ii) 162.4 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3
Av. yield	173	362	527	527

S.E./mean = 72.6 lb./ac.

1959

(i) 767.3 lb./ac. (ii) 118.8 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3
Av. yield	462	773	954	880

S.E./mean = 53.1 lb./ac.

Crop :- Gundli *(Kharif)*. **Ref :- Bh. 59(51).**
Site :- Govt. Agri. Farm, Neterhat. **Type :- 'M'.**

Object :—To test the effect of lime on Gundli.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Red laterite. (b) N.A. (iii) 12, 13.7.1959. (iv) (a) 5 ploughings. (b) Broadcast. (c) to (e) N.A. (v) Nil. (vi) Local. (vii) Unirrigated. (viii) 2 hoeings and 2 weedings. (ix) 36.4″. (x) 30.10.1959.

2. TREATMENTS :

4 manurial treatments : M_0=Control (no manure), M_1=3600 lb./ac. of lime, M_2=40 lb./ac. of N as Urea +40 lb./ac. of P_2O_5 as Super+40 lb./ac. of K_2O as Mur. Pot. and $M_3=M_2+M_1$

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) N.A. (b) 1/80 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) *Gundli* gall menace. (iii) Grain yield. (iv) (a) to (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 61 lb /ac. (ii) 5.19 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3
Av. yield	25	60	60	97

S.E./mean = 2.32 lb./ac.

Crop :- Gundli *(Kharif)*. **Ref :- Bh. 57(34).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'CM'.**

Object :—To find out the best method of sowing.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Gram. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Kanke. (iii) 7.7.1957. (iv) (a) 2 ploughings. (b) As per treatments. (c) 15 srs./ac. (d) Rows 18″ apart. (e) N.A. (v) Nil. (vi) Local. (vii) Unirrigated. (viii) 1 weeding and 1 hoeing. (ix) 35.80″. (x) 7.11.1959.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 methods of sowing : S_1=Broadcast and S_2=Line sowing.
(2) 2 manurial treatments : M_0=Control (no manure), and M_1=20 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 4. (b) 44′6″×16′. (iii) 6. (iv) (a) 16′×10′. (b) 14′6″×8′6″. (v) Nil. (vi) Yes.

4. GENERAL:

(i) Good. (ii) Nil. (iii) Yield of grain per plot. (iv) (a) 1957—1959. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 807 lb./ac. (ii) 123.6 lb./ac. (iii) Main effect of M and interaction M×S are highly significant. (iv) Av. yield of grain in lb./ac.

	S_1	S_2	Mean
M_0	623	498	561
M_1	938	1166	1052
Mean	781	832	807

S.E. of M marginal mean = 35.6 lb./ac.
S.E. of body of table = 50.4 lb./ac.

Crop :- Gundli *(Kharif)*. **Ref :- Bh. 58(76).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'CM'.**

Object :—To find out the best method of sowing

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Jowar*. (c) Nil. (ii) (a) Laterite soil. (b) Refer soil analysis, Kanke. (iii) 28.6.1958. (iv) (a) 3 ploughings. (b) As per treatment. (c) 15 srs./ac. (d) Row to row 10″. (e) N.A. (v) Nil. (vi) Local. (vii) Unirrigated. (viii) 1 weeding. (ix) 29.57″. (x) 4, 5.9.1958.

2. TREATMENTS :

Same as in expt. no. 57(34) on page 531.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 52′×12′. (b) 50′×10′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Attack of gundli gall—no control measures taken. (iii) Grain and straw yield. (iv) (a) 1957—1959. (b) No. (c) Nil. (v) (a) and (b) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 946 lb./ac. (ii) 141.4 lb./ac. (iii) Only main effect of M is highly significant. (iv) Av. yield of grain in lb./ac.

	S_1	S_2	Mean
M_0	720	563	642
M_1	1075	1424	1250
Mean	898	994	946

S.E. of any marginal mean = 40.8 lb./ac.
S.E. of body of table = 57.7 lb./ac.

Crop :- Gundli *(Kharif)*. **Ref :- Bh. 59(16).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'CM'.**

Object :—To find out the best method of sowing.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Jowar*. (c) 40 lb./ac. of N as A/S+30 lb./ac. of P_2O_5 as Super. (ii) (a) Clayey. (b) Refer soil analysis, Kanke. (iii) 10.6.1959. (iv) (a) 2 ploughings. (b) As per treatments. (c) 15 srs./ac. (d) Row to row 10″. (e) —. (v) Nil. (vi) Local. (vii) Unirrigated. (viii) Nil. (ix) 23″ approx. (x) 18.8.1959.

2. TREATMENTS :

Same as in expt. no. 57(34) on page 531.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 22′×26′. (v) 2′ between plots. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1957—1959. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 5439 lb./ac. (ii) 789.8 lb./ac. (iii) Only main effect of M is highly significant. (iv) Av. yield of grain in lb./ac.

	S_1	S_2	Mean
M_0	4906	3625	4266
M_1	6633	6590	6612
Mean	5770	5108	5439

S.E. of any marginal mean = 279.3 lb./ac.
S.E. of body of table = 394.9 lb./ac.

Crop :- Potato ***(Rabi).*** **Ref :- Bh. 57(161).**
Site :- Govt. Agri. Farm, Nawadah. **Type :- 'M'.**

Object :—To study the effect of N, P and K on Potato.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Wheat in *Rabi* and fallow in *Kharif*. (c) 20 lb./ac. of N as A/S+25 lb./ac. of P_2O_5 as Super. (ii) (a) and (b) N.A. (iii) 30.10.1957. (iv) (a) 6 ploughings. (b) Ridge planting. (c) 10 mds./ac. (d) 9″×9″. (e) N.A. (v) Nil. (vi) S.R.R. (vii) Irrigated. (viii) 1 earthing and 1 weeding. (ix) Nil. (x) 14 to 16.12.1957.

2. TREATMENTS :

9 manurial treatments : M_0=Control (no manure), M_1=75 lb./ac. of N as C/N, M_2=75 lb./ac. of N as A/S, M_3=150 lb./ac. of N as C/N, M_4=150 lb./ac. of N as A/S, M_5=150 lb./ac. of N as C/N+80 lb./ac. of P_2O_5 as Super, M_6=150 lb./ac. of N as A/S+80 lb./ac. of P_2O_5 as Super, M_7=150 lb./ac. of N as C/N+80 lb./ac. of P_2O_5 as Super +80 lb./ac. of K_2O as Mur. Pot. and M_8=150 lb./ac. of N as A/S+80 lb./ac. of P_2O_5 as Super+80 lb./ac. of K_2O as Mur. Pot.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 12′×44′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Potato yield. (iv) (a) 1957—1958. (b) Yes. (c) Nil. (v) (a) Patna and Purnea. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 26941 lb./ac. (ii) 1378¾lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of tuber in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8
Av. yield	13695	19965	23430	23348	22275	33495	31185	33495	41580

S.E./mean = 795.6 lb./ac.

Crop :- Potato ***(Rabi).*** **Ref :- Bh. 58(168).**
Site :- Govt. Agri. Farm, Nawadah. **Type :- 'M'.**

Object :—To study the effect of N, P and K on Potato.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Loam. (b) N.A. (iii) 18 to 20.11.1958. (iv) (a) 5 ploughings. (b) Flat method. (c) 10 mds./ac. (d) 2′×6″. (e) N.A. (v) Nil. (vi) D.R.R. (vii) Irrigated. (viii) Earthing up. (ix) 2.45″. (x) 21 to 25.2.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 57(161) on page 533..

4. GENERAL :

(i) Good. (ii) Spraying of Bordeaux mixture against late Blight. (iii) Potato yield. (iv) (a) 1957—1958. (b) No. (b) Nil. (v) (a) Patna and Purnea. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 247.2 lb./ac. (ii) 55.1 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of tuber in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8
Av. yield	138	159	198	166	209	294	385	272	403

S.E./mean = 31.8 lb./ac.

Crop :- Potato. **Ref :- Bh. 55(27).**

Site :- Govt. Agri. Farm, Neterhat. **Type :- 'M'.**

Object :—To study the effect of fertilizers and micronutrients on Potato.

1. BASAL CONDITIONS :

(i) (a) Cauliflower—Cabbage—G.M.—Potato. (b) G.M. with *sanai.* (c) Nil. (ii) (a) Clayey loam. (b) N.A. (iii) 25.9.1955. (iv) (a) 3 ploughings. (b) Ridging and double row planting. (c) N.A. (d) $12'' \times 10''$; 30″ between double rows. (e) N.A. (v) Nil. (vi) Up to date (early). (vii) Irrigated. (viii) 1 earthing 2 months after sowing. (ix) 14.22″ (x) 29.12.1955.

2. TREATMENTS :

M_1=20 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super+20 lb./ac. of K_2O as Mur. Pot.
M_2=20 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super+20 lb./ac. of K_2O as Mur. Pot.
M_3=40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super+40 lb./ac. of K_2O as Mur. Pot.
M_4=M_2+10 lb./ac. of Boron as Borax.
M_5=M_2+10 lb./ac. of Mn as MnO_2.
M_6=M_2+10 lb./ac. of Mg as Mg. Sul.
M_7=M_2+5 lb./ac. of Zn as Zn. Sul.
M_8=M_2+5 lb./ac. of Cu as Pernox.
M_9=M_2+10 lb./ac. of Boron as Borax+10 lb./ac. of Mg as Mg. Sul.
M_{10}=M_3+10 lb./ac. of Mg as Mg. Sul.+5 lb./ac. of Zn as Zn. Sul.+5 lb./ac. of Cu as Pernox.

3. DESIGN :

(i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 4. (iv) (a) $18' \times 14\frac{1}{2}'$. (b) $14' \times 10\frac{1}{2}'$. (v) $2' \times 2'$. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of Potato. (iv) (a) to (c) No. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 7649 lb./ac. (ii) 1468 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of tuber in lb./ac.

Treatment	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8	M_9	M_{10}
Av. Yield	8019	7467	8153	8429	6876	7067	7714	7048	7238	8476

S.E./mean = 734 lb./ac.

Crop :- Potato *(Rabi).* **Ref :- Bh. 57(165)**

Site :- Agri. Res. Instt., Patna. **Type :- 'M'.**

Object :—To study the effect of N, P and K on Potato.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Heavy clay. (b) Refer soil analysis, Patna. (iii) 15, 16.11.1957/28, 29.11.1957. (iv) (a) 6 ploughings. (b) Ridge planting. (c) 6 mds./ac. (d) 18″×9″. (e) N.A. (v) Nil. (vi) D.R.R. (vii) Irrigated. (viii) 1 earthing. (ix) 1.16″. (x) 10.3.1958 to 14.3.1958.

2. TREATMENTS :

Same as in expt. no. 57(161) on page 533.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 1/80 ac. (v) N.A. (6) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of tuber. (iv) (a) 1957—1958. (b) No. (c) Nil. (v) (a) Nawadah and Purnea. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 4998 lb./ac. (ii) 1838 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of tuber in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8
Av. yield	4155	5533	4690	4936	3949	4628	6068	7302	3723

S.E./mean = 919 lb./ac.

Crop :- Potato *(Rabi).* **Ref :- 58(148).**

Site :- Agri. Res. Instt., Patna. **Type :- 'M'.**

Object :—To study the effect of N, P and K on Potato.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Jowar.* (c) Nil. (ii) (a) Heavy clay. (b) Refer soil analysis, Patna. (iii) 22 to 24.11.1958. (iv) (a) 5 ploughings. (b) Sowing on ridges. (c) 6 mds./ac. (d) 18″×9″. (e) N.A. (v) Nil. (vi) BK—115. (vii) Irrigated. (viii) 1 weeding. (ix) 2.95″. (x) 16 to 21.2.1959.

2. TREATMENTS :

Same as in expt. no. 57(161) on page 533.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 31′×18.5′. (b) 29′×17′. (v) 12″×9″. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of tuber. (iv) (a) to (c) No. (v) (a) Nawadah and Purnea. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2918 lb./ac. (ii) 648.1 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8
Av. yield	1317	2181	2467	2263	2704	3162	4385	3585	4194

S.E./mean = 324.0 lb./ac.

Crop :- Potato *(Rabi).* **Ref :- Bh. 57(195).**

Site :- Dist. Agri. Farm, Purnea. **Type :- 'M'.**

1. BASAL CONDITIONS:

(i) (a) Nil. (b) Maize. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 20.10.1957. (iv) (a) to (e) N.A. (v) Nil. (vi) D.R.R. (vii) Irrigated. (viii) 1 earthing. (ix) 0.85″. (x) 2.2.1958.

2. TREATMENTS:

Same as in expt. no. 57(161) on page 533.

3. DESIGN:

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 43′×31′. (b) 40′×28′. (v) 1½′×1½′. (vi) Yes.

4. GENERAL:

(i) N.A. (ii) Virus attack—no control measures taken. *(iii)* Tuber yield. (iv) (a) 1957—1959. (b) Yes. (c) Nil. (v) (a) Nawadah and Patna. (b) N.A. (vi) and (vii) Nil.

5. RESULTS:

(i) 6990 lb./ac. (ii) 1930 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of tuber in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8
Av. yield	5996	7210	7117	6644	6984	5338	6742	7822	9061

S.E./mean = 965.0 lb./ac.

Crop :- Potato *(Rabi)*. **Ref :- Bh. 58(197).**

Site :- Dist. Agri. Farm, Purnea. **Type :- 'M'.**

Object :—To study the effect of N, P and K on Potato.

1. BASAL CONDITIONS:

(i) (a) N.A. (b) Maize. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 25.11.1958. (iv) (a) 4 ploughings. (b) Sowing on ridges. (c) 10 mds./ac. (d) 2′ between rows. (e) 1. (v) N.A. (vi) ON—2236. (vii) Irrigated. (viii) Once earthing up. (ix) 5.09″. (x) 6, 7, 8.3.1959.

2. TREATMENTS:

Same as in expt. no. 57(161) on page 533.

3. DESIGN:

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 43⅓′×30′. (b) 40⅓′×27′. (v) 1½′×1½′. (vi) Yes.

4. GENERAL:

(i) Not satisfactory. (ii) Attack of Agrotis—Aldrin sprayed. (iii) Tuber yield. (iv) (a) 1957—1958. (b) No. (c) Nil. (v) (a) Nawadah and Patna. (b) N.A. (vi) and (vii) Nil.

5. RESULTS:

(i) 561 lb./ac. (ii) 88.9 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8
Av. yield	400	445	662	464	531	510	717	552	769

S.E./mean = 44.5 lb./ac.

Crop :- Potato *(Rabi)*. **Ref :- Bh. 55(222).**

Site :- Dist. Agri. Farm, Purnea. **Type :- 'M'.**

Object :—To study the effect of N, P and K on Potato.

1. BASAL CONDITIONS:

(i) (a) to (c) N.A. (ii) (a) Sandy loam with alkaline patches. (b) N.A. (iii) 31.10.1955. (iv) (a) 3 ploughings by country plough and 1 spading. (b) Ridge planting. (c) 36000 cuttings/ac. (d) 1′ between rows. (e) 1. (v) Nil. (vi) Local. (viii) Irrigated. (viii) 2 weedings by *khurpi*. (ix) 1.50″. (x) 29.2.1956.

2. TREATMENTS :

5 manurial treatments : M_0=Control (no manure), M_1=80 lb./ac. of N as A/S, $M_2=M_1+80$ lb./ac. of P_2O_5 as Super, $M_3=M_1+80$ lb./ac. of K_2O as Mur. Pot. and $M_4=M_1+80$ lb./ac. of P_2O_5 as Super+80 lb./ac. of K_2O as Mur. Pot.

Manures applied one day before planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 35½′×22½′. (b) 33′×20′. (v) 15″×15″. (vi) Yes.

4. GENERAL :

(i) Not satisfactory. (ii) Mild attack of ***nomatode***, no control measure taken. (iii) Tuber yield. (iv) (a) to (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 5610 lb./ac. (ii) 895.8 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of tuber in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	3580	6325	5640	6140	6365

S.E./mean = 447.9 lb./ac.

Crop :- Potato. **Ref :- Bh. 54(63).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To study the effect of N, P, K, and Mn on Potato.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Maize. (c) As per treatments. (ii) (a) Sandy loam. (b) N.A. (iii) 16.11.1954. (iv) (a) 3 spadings. (b) Sown in lines. (c) N.A. (d) 30″×6″. (e) 1. (v) Nil. (vi) D.R.R.—(late). (vii) Irrigated. (viii) 1 earthing a month after sowing and 1 weeding. (ix) 1.62″. (x) 15.3.1955.

2. TREATMENTS :

T_1=Control (no manure).

T_2=40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super+40 lb./ac. of K_2O as Pot. Sul.

$T_3=T_2+1$ oz./plot of Mn as $MnSO_4$.

$T_4=T_2+2$ oz./plot of Mn as $MnSO_4$.

$T_5=T_2+3$ oz./plot of Mn as $MnSO_4$.

$MnSO_4$ and K_2O applied at the time of sowing. Half dose of A/S+Super was applied at the time of sowing and the remaining half at earthing time.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 3. (iv) (a) and (b) 12′×9′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Fair ; no lodging. (ii) Nil. (iii) Weight of Potato. (iv) (a) 1953—1954. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 10763 lb./ac. (ii) 1905 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of tuber in lb./ac.

Treatment	T_1	T_2	T_3	T_4	T_5
Av. yield	3512	13772	13066	12789	10680

S.E./mean = 1100 lb./ac.

Crop :- Potato *(Rabi)*. **Ref :- Bh. 58(217).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To study the effect of N, P and K on Potato

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Maize. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 3 to 9.11.1958. (iv) (a) 4 ploughings. (b) Planting on ridges. (c) 10 md./ac. (d) 24″×6″. (e) N.A. (v) Nil. (vi) D.R.R. (vii) Irrigated. (viii) Earthing. (ix) 2.5″. (x) 19.2.1959 to 1.3.1959.

2. TREATMENTS :

Same as in expt. no. 57(161) on page 533.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 22′×29′. (b) 20′×27′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Nil. (ii) Rat menace. No control measures. (iii) Potato yield. (iv) (a) 1957—N.A. (b) No. (c) Nil. (v) (a) Nawadah, Patna and Purnea. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 15111 lb./ac. (ii) 2979 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of tuber in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8
Av. yield	9313	15141	13835	15266	17589	15390	18149	14540	16780

S.E./mean = 1490 lb./ac.

Crop :- Potato. **Ref :- Bh. 58(SFT).**

Centre :- Bhagalpur (c.f.). **Type :- 'C'.**

Object :—Type A :—To study the response of Potato to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Alluvial. (iii) Nil. (iv) Local. (v) to (x) N.A.

2. TREATMENTS :

0 =Control (no manure).
n =50 lb./ac. of N as A/S.
p =25 lb./ac. of P_2O_5 as Super.
np =50 lb./ac. of N as A/S+25 lb./ac. of P_2O_5 as Super.
k =50 lb./ac. of K_2O as Mur. Pot.
nk =50 lb./ac. of N as A/S+50 lb./ac. of K_2O as Mur. Pot.
pk =25 lb./ac. of P_2O_5 as Super+50 lb./ac. of K_2O as Mur. Pot.
npk =50 lb./ac. of N as A/S+25 lb./ac. of P_2O_5 as Super+50 lb./ac. of K_2O as Mur. Pot.

3. DESIGN :

(i) and (ii) The district has been divided into four agriculturally homogenous zones and one field assistant posted in each zone. The field assistant conducts the trials in one Revenue circle or thana in the zone and the circle/thana is changed once in two years within the same zone. Each field assistant is required to conduct 31 trials in a year, 8 on *kharif* cereal, 8 on *rabi* cereal, 8 on cash crops, 4 on an oilseed crop and 3 on a leguminous crop. Half the number of trials conducted are of type A and the other half of type B on crops other than the legumes. The three trials on legumes are of type C. Residual effect of phosphate application are studied on type C trials in two out of the four zones in each district in every year. The above experiments are laid out in randomly located fields in randomly selected villages in each of the 4 zones at the rate of one experiment per village. (iii) (a) N.A. (b) 1/80 ac. (iv) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Tuber yield. (iv) (a) 1958—contd. (b) No. (c) Nil. (v) As per design. (vi) and (vii) Nil.

5. RESULTS :

Eeffect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	757	625	848	184.3	321	560	—25	239	134.1

Control yield = 5538 lb./ac. and no. of trials = 16.

Crop :- Potato. **Ref :- Bh. 59(SFT).**

Centre :- Bhagalpur (c.f.). **Type :- 'C'.**

Object :—Type A :—To study the response of Potato to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Alluvial (iii) Nil. (iv) Local. (v) to (x) N.A.

2. TREATMETNS to 4. GENERAL :

Same as in expt. no. 58(SFT) type A on page 538 conducted at Bhagalpur.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	2271	773	288	213.9	543	—33	354	181	196.7

Control yield = 4657 lb./ac. and no. of trials = 12.

Crop :- Patato. **Ref :- Bh. 58(SFT).**

Centre :- Gaya (c.f.). **Type :- 'C'.**

Object :—Type A :—To study the response of Potato to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Alluvial. (iii) Nil. (iv) Local. (v) to (x) N.A.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type A on page 538 conducted at Bhagalpur.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	1744	1136	1218	194.2	—741	—214	—634	979	529.9

Control yield = 12935 lb./ac. and no. of trials = 9.

Crop :- Potato. **Ref :- Bh. 59(SFT).**

Centre :- Gaya (c f.). **Type :- 'C'.**

Object :—Type A :—To study the response of Potato to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Alluvial. (iii) Nil. (iv) Local. (v) to (x) N.A.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type A on page 538 conducted at Bhagalpur.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	2888	584	—1061	336.5	140	—1086	247	634	142.4

Control yield = 7266 lb./ac. and no of trials = 12.

Crop :- Potato. **Ref :- Bh. 58(SFT).**

Centre :- Hazaribagh (c.f.). **Type :- 'C'.**

Object :—Type A—To study the response of Potato to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Red soil. (iii) Nil. (iv) Local. (v) to (x) N.A.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type A on page 538 conducted at Bhagalpur.

5. RRSULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	2913	3107	1819	93.8	625	938	815	461	102

Control yield = 4032 lb./ac. and no. of trials = 4.

Crop :- Potato. **Ref :- Bh. 59(SFT).**

Centre :- Hazaribagh (c.f.). **Type :- 'C'.**

Object :—Type A—To study the response of Potato to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Red. (iii) Nil. (iv) Local. (v) to (x) N.A.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type A on page 538 conducted at Bhagalpur.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	2962	2181	2246	199.1	197	—272	—444	494	150.6

Control yield = 5604 lb./ac. and no. of trials = 10.

Crop :- Potato. **Ref :- Bh. 58(SFT).**

Centre :- Monghyr (c.f.). **Type :- 'M'.**

Object :—Type A—To study the response of Potato to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Alluvial. (iii) Nil. (iv) Local. (v) to (x) N.A.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type A on page 538 conducted at Bhagalpur.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	4517	1275	—518	1094.4	140	132	140	140	646.8

Control yield = 8171 lb./ac. and no. of trials = 5.

Crop :- Potato. **Ref :- Bh. 59(SFT).**

Centre :- Monghyr (c.f.). **Type :- 'M'.**

Object :—Type A —To study the response of Potato to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Alluvial. (iii) Nil. (iv) Local. (v) to (x) N.A.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type A on page 538 conducted at Bhagalpur.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	3365	1078	518	532.4	—16	41	99	99	326.7

Control yield = 8105 lb./ac. and no. of trials = 10.

Crop :- Potato. **Ref :- Bh. 58(SFT).**

Centre :- Muzaffarpur (c.f.). **Type :- 'M'.**

Object :—Type A—To study the response of Potato to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Alluvial. (iii) Nil. (iv) Local. (v) to (x) N.A.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type A on page 538 conducted at Bhagalpur.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	2246	1210	272	66	—58	—58	25	107	83.9

Control yield = 7323 lb./ac. and no. of yield = 8

Crop :- Potato. **Ref :- Bh. 59 (SFT).**

Centre :- Muzaffarpur (c.f.). **Type :- 'M'.**

Object :—Type A—To study the response of Potato to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Alluvial. (iii) Nil. (iv) Local. (v) to (x) N.A.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type A on page 538 conducted at Bhagalpur.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	4427	2370	568	134.9	8	189	181	288	155.5

Control yield = 12606 lb./ac. and no. of trials = 4.

Crop :- Potato. **Ref :- Bh. 58(SFT).**

Centre :- Patna (c.f.). **Type :- 'M'.**

Object :—Type A—To study the response of Potato to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Other alluvial. (iii) Nil. (iv) Local. (v) to (x) N.A.

2. TREATMENTS to 4. GENERAL :

Same as in expt, no. 58(SFT) type A on page 538 conducted at Bhagalpur.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	1506	1226	1538	316.8	436	107	—123	551	241.9

Control yield = 7233 lb./ac., and no. of trials = 13.

Crop :- Potato. **Ref :- Bh. 59(SFT)**

Centre :- Patna (c.f.). **Type :- 'M'.**

Object :—Type A—To study the response of Potato to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Other alluvial. (iii) Nil. (iv) Local. (v) to (x) N.A.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type A on page 538 conducted at Bhagalpur.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	3489	1744	1588	437.8	—107	99	99	543	268.3

Control yield = 10203 lb./ac. and no. of trials = 12.

Crop :- Potato. **Ref :- Bh. 58(SFT).**

Centre :- Ranchi (c.f.). **Type :- 'M'.**

Object :—Type A—To study the response of Potato to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Red soil. (iii) Nil. (iv) Local. (v) to (x) N A.

2. TREATMENTS to 4. GENERAL :

Same as in expt· no. 58(SFT) type A on page 538 conducted at Bhagalpur.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	4197	3357	996	379	568	—173	469	848	321

Control yield = 8665 lb./ac. and no. of trials = 10.

Crop :- Potato. **Ref :- Bh. 59(SFT).**

Centre :- Ranchi (c.f.). **Type -: 'M'.**

Object :—Type A—To study the response of Potato to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Red soil. (iii) Nil. (iv) Local. (v) to (x) N.A.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type A on page 538 condnct at Bhagalpur.

5. RESULTS :

Eeffect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	3448	2987	1136	250	41	0	—107	568	187

Control yield = 3752 lb./ac. and no. of trials = 8.

Crop :- Potato. **Ref :- Bh. 58(SFT).**

Centre :- Santhal Paraganas (c.f.). **Type :- 'M'.**

Object :—Type A—To study the response of Potato to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Red soil. (iii) Nil. (iv) Local. (v) to (x) N.A.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type A on page 538 conducted at Bhagalpur.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	304	354	239	38	—49	25	—66	173	28

Control yield = 4699 lb./ac. and no. of trials = 12..

Crop -: Potato. **Ref :- Bh. 59(SFT).**

Centre :- Santhal Paraganas (c.f.). **Type :- 'M'.**

Object : Type A :—To study the response of Potato to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS:

(i) (a) to (c) Nil. (ii) Red. (iii) Nil. (iv) Local. (v) to (x) N.A.

2. TREATMENTS to 4. GENERAL:

Same as in expt. no. 58(SFT) type A on page 538 conducted at Bhagalpur.

5. RESULTS:

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac	2065	1407	—8	233	650	—872	—913	—699	215

Control yield = 5102 lb./ac. and no. of trials = 12.

Crop :- Potato. **Ref :- Bh. 58(SFT).**

Centre :- Shahabad (c.f.). **Type :- 'M'.**

Object :—Type A :—To study the response of Potato to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Alluvial. (iii) Nil. (iv) Local. (v) to (x) N.A.

2. TREATMENTS to 4. GENERAL ;

Same as in expt. no. 58(SFT) type A on page 538 conducted at Bhagalpur.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S E.
Av. response in lb./ac.	996	1489	1037	331	—411	16	16	749	374

Control yield = 9545 lb./ac. and no. of trials = 8.

Crop :- Potato. **Ref :- Bh. 59(SFT).**

Centre :- Shahabad (c.f.). **Type :- 'M'.**

Object :—Type A :—To study the response of Potato to levels of N, P and K applied individually and in combinatons.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Alluvial. (iii) Nil. (iv) Local. (v) to (x) N.A.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type A on page 538 conducted at Bhagalpur.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	2724	2847	1893	247	790	58	272	444	236

Control yield = 7233 lb./ac. and no. of trials = 12.

Crop :- Potato. **Ref :- Bh. 58(SFT).**

Centre :- Bhagalpur (c.f.). **Type :- 'M'.**

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Alluvial. (iii) Nil. (iv) and (v) N.A. (vi) Local. (vii) to (x) N.A.

2. TREATMENTS :

0 = Control (no manure).
n_1' = 50 lb./ac. of N as Urea.
n_2' = 100 lb./ac. of N as Urea.
n_1'' = 50 lb./ac. of N as A/S/N.
n_2'' = 100 lb./ac. of N as A/S/N.
n_1''' = 50 lb./ac. of N as C/A/N.
n_2''' = 100 lb./ac. of N as C/A/N.

3. DESIGN :

(i) and (ii) The district has been divided into four agriculturally homogeneous zones and one field assistant posted in each zone. The field assistant conducts the trials in one Revenue circle or thana in the zone and the circle/thana is changed once in two years within the same zone. Each field assistant is required to conduct 31 trials in a year, 8 on *kharif* cereal, 8 on a *rabi* cereal, 8 on cash crops, 4 on an oil seed crop and 3 on a leguminous crop. Half the number of trials conducted are of type A and the other half of type B on crops other than the legumes. Three trials on legumes are type C. Residual effects of phosphate application are studied on type C trials in two out of the four zones in each district every year. The above experiments are laid out in randomly located fields in randomly selected villages in each of the 4 zones at the rate of one experiment per village. (iii) (a) N.A. (b) 1/80 ac. (iv) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Tuber yield. (iv) (a) 1958—contd. (b) No. (c) N.A. (v) As per design. (vi) and (vii) Nil.

5. RESULTS :

Treatment	0	n_1'	n_2'	n_1''	n_2''	n_1'''	n_2'''
Av. yield	4361	5497	5612	4443	4155	4773	4690

G.M. = 4790 lb./ac., S.E. = 244.4 lb./ac. and no. of trials = 6.

Crop :- Potato. **Ref :- Bh. 59(SFT).**

Centre :- Bhagalpur (c.f.). **Type :- 'M'.**

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 58(SFT) type B on page 544 conducted at Bhagalpur.

5. RESULTS :

Treatment	0	n_1'	n_2'	n_1''	n_2''	n_1'''	n_2'''
Av. yield	4057	5727	7126	4452	5291	4164	4978

G.M. = 5114 lb./ac., S.E. = 147.8 lb./ac. and no. of trials = 12.

Crop :- Potato. **Ref :- 59(SFT).**

Centre :- Champaran (c.f.). **Type :- 'M'.**

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 58(SFT) type B on page 544 conducted at Bhagalpur.

5. RESULTS :

Treatment	0	n_1'	n_2'	n_1''	n_2''	n_1'''	n_2'''
Av. yield	7817	9191	10228	10146	10919	8286	9084

G.M. = 9382 lb./ac., S.E. = 346.2 lb./ac. and no. trials = 11.

Crop :- Potato. **Ref :- Bh. 58(SFT).**

Centre :- Hazaribagh (c.f.). **Type :- 'M'.**

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizer at different doses

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Red soil. (iii) Nil. (iv) and (v) N.A. (vi) Local. (vii) to (x) N.A.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SET) type B on page 544 conducted at Bhagalpur.

5. RESULTS :

Treatment	0	n_1'	n_2'	n_1''	n_2''	n_1'''	n_2'''
Av. yield	3637	4912	6295	3818	4090	4279	5464

G.M. = 4642 lb /ac., S.E. = 181.0 lb./ac. and no. of trials = 8.

Crop :- Potato. **Ref :- Bh. 59(SFT).**

Centre :- Hazaribagh (c.f.). **Type :- 'M'.**

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Red soil. (iii) Nil. (iv) and (v) N.A. (vi) Local. (viii) to (x) N.A.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type B on page 544 conducted at Bhagalpur.

5. RESULTS :

Treatment	0	n_1'	n_2'	n_1''	n_2''	n_1'''	n_2'''
Av. yield	5044	7924	9800	10014	10187	7134	12302

G.M. = 8915 lb./ac., S.E. 264.7 lb./ac. and no. trials = 8.

Treatment	0	n_1''	n_2''	n_1'''	n_2'''
Av. yield	6459	13906	15248	10080	16539

G.M. = 12446 lb./ac. ; S.E. = 938.5 lb./ac. and no. of trials = 4.

Experiment conducted with 5 treatments only.

Crop :- Potato. **Ref :- Bh. 59(SFT).**

Centre :- Monghyr (c.f.). **Type :- 'M'.**

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 58(SFT) type B on page 544 conducted at Bhagalpur.

5. RESULTS :

Treatment	0	n_1'	n_2'	n_1''	n_2''	n_1'''	n_2'''
Av. yield	9784	12598	15330	12499	16556	12935	15042

G.M. = 13535 lb./ac. ; S.E. = 573.7 lb./ac. and no. of trials = 8.

Crop :- Potato. **Ref :- Bh. 58(SFT).**

Centre :- Muzaffarpur (c.f.). **Type :- 'M'.**

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 58(SFT) type B on page 544 conducted at Bhagalpur.
Experiment conducted with first 5 treatments only.

5. RESULTS :

Treatment	0	n_1'	n_2'	n_1''	n_2''
Av. yield	2715	3209	3374	3250	3374

G.M. = 3184 lb./ac. ; S.E. = 89.0 lb./ac. and no. of trials = 4.

Crop :- Potato. **Ref :- Bh. 59(SFT).**

Centre :- Muzaffarpur (c.f.). **Type :- 'M'.**

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 58(SFT) type B on page 544 conducted at Bhagalpur.

5. RESULTS :

Treatment	0	n_1'	n_2'	n_1''	n_2''	n_1'''	n_2'''
Av. yield	12458	15906	22151	22077	19066	14548	20152

G.M. = 18051 lb./ac. ; S.E. = 288.6 lb./ac. and no. of trials = 4.

Crop :- Potato. **Ref :- Bh. 58(SFT).**

Centre :- Patna (c.f.). **Type :- 'M'.**

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 58(SFT) type B on page 544 conducted at Bhagalpur.

5. RESULTS :

Treatment	0	n_1'	n_2'	n_1''	n_2''	n_1'''	n_2'''
Av. yield	8656	11018	12911	14285 (3)	14721	10829 (7)	11907

G.M. (simple average) = 12047 lb./ac. ; S.E. = 217.6 lb./ac. and no. of trials = 10.

Crop :- Potato. **Ref :- Bh. 59(SFT).**

Centre :- Patna (c.f.). **Type :- 'M'.**

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 58(SFT) type B on page 544 conducted at Bhagalpur.

5. RESULTS :

Treatment	0	n_1'	n_2'	n_1''	n_2''	n_1'''	n_2'''
Av. yield	7472	9142	10985	9372	10862	9331	10516

G.M. = 9669 lb./ac. ; S.E. = 455.0 lb./ac. and no. of trials = 7.

Treatment	0	n_1'	n_2'	n_1'''	n_2'''
Av. yield	10903	18160	20020	16013	16786

G.M. = 16376 lb./ac. ; S.E. = 286.9 lb./ac. and no. of trials = 4.
Experiment laid out with 5 treatment only.

Crop :- Potato. **Ref :- Bh. 59(SFT).**

Centre :- Ranchi (c.f.). **Type :- 'M'.**

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Red soil. (iii) Nil. (iv) and (v) N.A. (vi) Local. (vii) to (x) N.A.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type B on page 544 conducted at Bhagalpur.

5. RESULTS :

Treatment	0	n_1'	n_2'	n_1''	n_2''	n_1'''	n_2'''
Av. yield	3579	6459	8846	6970	8122	7134	11026

G.M. = 7448 lb./ac. ; S.E. = 274.6 lb./ac. and no. of trials = 4.

Treatment	0	n_1''	n_2''	n_1'''	n_2'''
Av. yield	5357	8936	10804	9693	9364

G.M. = 8831 lb./ac. ; S.E./mean = 458.5 lb./ac. and no. of trials = 4.
Experiment laid out with 5 treatments only.

Crop :. Potato. **Ref :- Bh. 59(SFT)**

Centre :- Santhal Paraganas (c.f.). **Type :- 'M'.**

Object :—To investigate the relative efficiency of different nitrogenous fertilisers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Red soil. (iii) Nil. (iv) and (v) N.A. (vi) Local. (vii) to (x) N.A.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type B on page 544 conducted at Bhagalpur.

5. RESULTS :

Treatment	0	n_1'	n_2'	n_1''	n_2''	n_1'''	n_2'''
Av. yield	3859	5258	5941	5126	5883	4921	5439

G.M. = 5204 lb./ac., S.E. = 89.6 lb./ac. and no. of trials = 12.

Crop :- Potato. **Ref :- Bh. 58(SFT).**

Centre :- Shahabad. **Type :- 'B'.**

Object : —Type B—To investigate the relative efficiency of different nitrogenous fertilisers at different doses.

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 58(SFT) Type B on page 544 conducted at Bhagalpur.

5. RESULTS :

Treatment	0	n_1'	n_2'	n_1''	n_2''	n_1'''	n_2'''
Av. yield	6797	9430	11191	10335	11833	9051	10862

G.M. = 9928 lb./ac., S.E. = 605.1 lb./ac. and no. of trials = 4.

Crop :- Potato. **Ref :- Bh. 59(SFT).**

Centre :- Shahabad. **Type :- 'B'.**

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 58(SFT) type B on page 544 conducted at Bhagalpur.

5. RESULTS :

Treatment	0	n_1'	n_2'	n_1''	n_2''	n_1'''	n_2'''
Av. yield	7126	9693	12911	8895	11973	9603	11948

G.M. = 10307 lb./ac., S.E. = 381.7 lb./ac. and no. of trials = 12.

EXPERIMENTS CONDUCTED BY FIELD EXPERIMENTAL SPECIALIST ON POTATO

Object :—To find out a suitable manurial schedule for Potato.

TREATMENTS :

All combinations of (1), (2) and (3)

(1) 3 levels of N as A/S : $N_0=0$, $N_1=80$ and $N_2=160$ lb./ac.
(2) 3 levels of P_2O_5 as Super : $P_0=0$, $P_1=60$ and $P_2=120$ lb./ac.
(3) 3 levels of K_2O as Mur. Pot. : $K_0=0$, $K_1=60$ and $K_2=120$ lb./ac.

IRRIGATED TRIALS

Serial no. : 1. Block (Dist.) : Amarpur (Bhagalpur). **Soil type :** Loam. **Years :** 1956 to 1959.

RESULTS :

(i) 8331 lb./ac. (ii) 1422 lb./ac. (iii) Main effects of N and P are highly significant. No other effect is significant. (iv) Av. yield of tuber in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	5779	6003	6250	5466	6272	6294	6012
N_1	8803	9184	9050	8691	9050	9296	9012
N_2	9878	10102	9923	9363	10013	10528	9968
Mean	8153	8430	8408	7840	8445	8706	8331
P_0	7706	8019	7795				
P_1	8355	8445	8534				
P_2	8400	8826	8893				

Serial no. : 2. **Block (Dist.) :** Colgong (Bhagalpur). **Soil type :** Loam. **Years :** 1956, 1958 and 1959.

RESULTS :

(i) 7345 lb./ac. (ii) 1180 lb./ac. (iii) Main effect of N is highly significant. Main effect of P is significant. (iv) Av. yield of tuber in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	5824	5488	6541	5802	6250	5802	5951
N_1	7325	7414	7728	7078	7571	7818	7489
N_2	8378	8624	8781	7795	8400	9587	8594
Mean	7176	7175	7683	6892	7407	7739	7345
P_0	7034	6384	7257				
P_1	6899	7437	7885				
P_2	7594	7706	7907				

Serial no. : 3. **Block (Dist.) :** Naugachia (Bhagalpur). **Soil type :** Clay. **Years :** 1957 and 1959.

RESULTS :

(i) 4400 lb./ac. (ii) 385 lb./ac. (iii) Main effects of N, P and K alone are highly significant. (iv) Av. yield of tuber in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	3226	3382	3651	2867	3494	3898	3420
N_1	3965	4570	4659	4032	4480	4682	4398
N_2	5018	5488	5645	4861	5555	5734	5383
Mean	4070	4480	4652	3920	4510	4771	4400
P_0	3718	3942	4099				
P_1	4189	4682	4659				
P_2	4301	4816	5197				

Serial no. : 4. **Block (Dist.) :** Shahkund (Bhagalpur). **Soil type :** Loam. **Years :** 1957 to 1959.

RESULTS :

(i) 7367 lb./ac. (ii) 1225 lb./ac. (iii) Main effects of N, P and K are highly significant. Other effects are not significant. (iv) Av. yield of tuber in lb./ac

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	5197	6272	6832	5331	6474	6496	6100
N_1	7549	7728	7862	7370	7930	7840	7713
N_2	8198	8288	8378	7885	8400	8579	8288
Mean	6981	7429	7691	6862	7601	7638	7367
P_0	6810	6944	6832				
P_1	6944	7549	8310				
P_2	7190	7795	7930				

Serial no. : 5. **Block (Dist.) :** Sultanganj (Bhagalpur). **Soil type :** Sandy loam. **Years :** 1956, 1957 and 1959.

RESULTS :

(i) 11538 lb./ac. (ii) 1940 lb./ac. (iii) Main effects of N and P are highly significant. Other effects are not significant. (iv) Av. yield of tuber in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	9542	8893	9296	7930	9744	10058	9244
N_1	11357	11536	12298	10797	12096	12298	11730
N_2	13776	13843	13306	13014	13171	14739	13641
Mean	11558	11424	11633	10580	11670	12365	11538
P_0	10685	10214	10394				
P_1	11245	11850	12365				
P_2	12746	12208	12141				

Serial no. : 6. **Block (Dist.) :** Bagaha (Champaran). **Soil type :** Sandy. **Years :** 1957 to 1959.

RESULTS :

(i) 11180 lb./ac. (ii) 990 lb./ac. (iii) Main effects of N and P are highly significant. Other effects are not significant. (iv) Av. yield of tuber in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	9184	9990	10685	9050	10214	10595	9953
N_1	10461	11603	11827	10662	11514	11715	11297
N_2	11648	12454	12768	11200	12432	13238	12290
Mean	10431	11349	11760	10304	11387	11848	11180
P_0	9856	10550	10506				
P_1	10326	11693	12141				
P_2	11110	11805	12634				

Serial no. : 7. **Block (Dist.) :** Gobindganj (Champaran). **Soil type :** Loam. **Years :** 1956 to 1959.

RESULTS :

(i) 8176 lb./ac. (ii) 1655 lb./ac. (iii) Main effects of N, P and K are highly significant. Other effects are not significant. (iv) Av. yield of tuber in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	6474	6496	7123	5398	7594	7101	6698
N_1	7952	8154	8669	6922	9184	8669	8258
N_2	9766	9475	9475	8579	9386	10752	9572
Mean	8064	8042	8422	6966	8721	8841	8176
P_0	6899	6653	7347				
P_1	8758	8534	8870				
P_2	8534	8938	9050				

Serial no. : 8. **Block (Dist.) :** Nautan (Champaran). **Soil type :** Sandy. **Years :** 1956 to 1959.

RESULTS :

(i) 10777 lb./ac. (ii) 1205 lb./ac. (iii) Main effects of N, P and K are highly significant. Other effects are not significant. (iv) Av. yield of tuber in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	7101	7661	8243	7347	7594	8064	7668
N_1	10013	11021	11290	10170	10886	11267	10775
N_2	13530	13798	14336	13418	13597	14650	13888
Mean	10215	10827	11290	10312	10692	11327	10777
P_0	9722	10438	10774				
P_1	10282	10326	11469				
P_2	10640	11715	11626				

Serial no. : 9. **Block (Dist.) :** Ramnagar (Champaran). **Soil type :** Clay. **Years :** 1957 to 1959.

RESULTS :

(i) 7370 lb./ac. (ii) 1729 lb./ac. (iii) Main effects of N and P are highly significant. Other effects are not significant. (iv) Av. yield of tuber in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	5174	6003	7620	4973	6003	6922	5966
N_1	7549	7459	7549	7392	7414	7750	7519
N_2	8333	8646	8893	8243	8602	9027	8624
Mean	7019	7369	7721	6869	7340	7900	7370
P_0	6608	6877	7123				
P_1	7213	7056	7750				
P_2	7235	8176	8288				

Serial no. : 10. **Block (Dist.) :** Dalsing Sarai (Darbhanga) **Soil type :** Sandy. **Years :** 1956 to 1959.

RESULTS :

(i) 11277 lb./ac. (ii) 1288 lb./ac. (iii) Main effects of N and P are highly significant. Other effects are not significant. (iv) Av. yield of tuber in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	8422	9050	9072	7728	9117	9699	8848
N_1	11043	11827	11357	10438	11738	12051	11409
N_2	13306	13574	13843	12387	13597	14739	13574
Mean	10924	11484	11424	10184	11484	12163	11277
P_0	9811	10595	10147				
P_1	11178	11536	11738				
P_2	11782	12320	12387				

Serial no. : 11. **Block (Dist.) : Jainager (Darbhanga).** **Soil type : Loam.** **Years : 1958 and 1959.**

RESULTS :

(i) 8440 lb./ac. (ii) 1608 lb./ac. (iii) Main effects of N and P are highly significant. Other effects are not significant. (iv) Av. yield of tuber in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	6541	6698	6250	6160	6451	6877	6496
N_1	8512	9005	8714	8198	9005	9027	8744
N_2	9677	9968	10595	8714	11021	10506	10080
Mean	8243	8557	8520	7691	8826	8803	8440
P_0	7101	8198	7773				
P_1	9005	8490	8982				
P_2	8624	8982	8803				

Serial no. : 12. **Block (Dist.) : Khajrauli (Darbhanga).** **Soil type : Sandy.** **Years : 1956 to 1959.**

RESULTS :

(i) 18748 lb./ac. (ii) 2247 lb./ac. (iii) Main effects of N, P and K are highly significant. Interaction N×P is highly significant. Other effects are not significant. (iv) Av. yield of tuber in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	14179	15434	16083	12275	15344	18077	15232
N_1	15568	16733	17382	15030	16979	17674	16561
N_2	17830	18480	19040	17494	18906	18950	18450
Mean	15859	16882	17502	14933	17076	18234	18748
P_0	13821	15165	15814				
P_1	16598	16845	17786				
P_2	17158	18637	18906				

Serial no. : 13. **Block (Dist.) : Samastipur (Darbhanga).** **Soil type : Clay.** **Years : 1957 to 1959**

RESULTS :

(i) 10043 lb./ac. (ii) 1044 lb./ac. (iii) Main effects of N, Pand K are highly significant. Other effects are not significant. (iv) Av. yield of tuber in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	8310	8938	9005	7571	8758	9923	8751
N_1	9610	9923	11021	9206	10192	11155	10184
N_2	10954	11133	11491	10013	11402	12163	11193
Mean	9625	9998	10506	8930	10117	11080	10043
P_0	8310	8982	9498				
P_1	9923	9811	10618				
P_2	10640	11200	11402				

Serial no. : 14. **Block (Dist.) :** Tajpore (Darbhanga). **Soil type :** Clay. **Years :** 1957 to 1959.

RESULTS :

(i) 9296 lb./ac. (ii) 1169 lb./ac. (iii) Main effects of N and P are highly significant. No other effect is significant. (iv) Av. yield of tuber in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	7750	7549	8198	6922	7773	8803	7832
N_1	9206	9610	9654	8870	9610	9990	9490
N_2	10170	10752	10774	9946	10573	11178	10565
Mean	9042	9304	9542	8579	9319	9990	9296
P_0	8154	8557	9027				
P_1	9162	9296	9498				
P_2	9811	10058	10102				

Serial no. : 15. **Block (Dist.) :** Arwal (Gaya). **Soil type :** Loam. **Years :** 1956, 1958 and 1959.

RESULTS :

(i) 11240 lb./ac. (ii) 479 lb./ac. (iii) Main effects of N, P, K and interaction N×P are highly significant. Interaction N×K is significant. (iv) Av. yield of tuber in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	9834	10618	10550	9408	10416	11178	10334
N_1	11200	11312	11446	10864	11379	11715	11319
N_2	11894	12141	12163	11581	12141	12477	12066
Mean	10976	11357	11386	10618	11312	11790	11240
P_0	10461	10618	10774				
P_1	11043	11402	11491				
P_2	11424	12051	11894				

Serial no. : 16. **Block (Dist.) :** Aurangabad (Gaya). **Soil type :** Sandy. **Years :** 1957 to 1959.

RESULTS :

(i) 9503 lb./ac. (ii) 930 lb./ac. (iii) Main effects of N and P are highly significant. Interaction P×K is significant. Other effects are not significant. (iv) Av. yield of tuber in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	6787	6877	7392	6115	7056	7885	7019
N_1	9251	9498	9610	8893	9542	9923	9453
N_2	12074	11939	12096	11491	12074	12544	12036
Mean	9371	9438	9699	8833	9557	10118	9503
P_0	8669	9050	8781				
P_1	9677	9341	9654				
P_2	9766	9923	10662				

Serial no. : 17. **Block (Dist.) :** Belaganj (Gaya). **Soil type :** Loam. **Years :** 1956 to 1959.

RESULTS :

(i) 13853 lb./ac. (ii) 2753 lb./ac. (iii) Main effect of N is highly significant. Main effect of P is significant. (iv) Av. yield of tuber in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	11133	11760	10864	10774	11446	11536	11252
N_1	14560	14448	14202	13776	14762	14672	14403
N_2	15523	15904	16285	14717	16509	16487	15904
Mean	13738	14037	13783	13089	14239	14232	13853
P_0	12902	13194	13171				
P_1	14448	14224	14045				
P_2	13866	14694	14134				

Serial no. : 18. **Block (Dist.) :** Gaya Muffasil (Gaya). **Soil type :** Loam. **Years :** 1956 to 1958.

RESULTS :

(i) 14187 lb./ac. (ii) 948 lb./ac. (iii) Main effects of N, P and K and interactions N×P and N×K are higly significant. (iv)Av. yield of tuber in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	10102	11558	12074	8512	12230	12992	11245
N_1	14784	14918	14605	13933	14874	15501	14769
N_2	16531	16688	16419	15882	16621	17136	16546
Mean	13806	14388	14366	12776	14575	15210	14187
P_0	12499	13082	12746				
P_1	13910	14829	14986				
P_2	15008	15254	15366				

Serial no. : 19. **Block (Dist.) :** Ghoshi (Gaya). **Soil type :** Loam. **Years :** 1956, 1958 and 1959.

RESULTS :

(i) 12785 lb./ac. (ii) 2197 lb./ac. (iii) Main effects of N and P are highly significant. Main effect of K is significant. (iv) Av. yield of tuber in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	8714	10214	10371	6966	10147	12186	9766
N_1	13014	13238	13754	11178	13059	15770	13335
N_2	14851	15747	15165	13328	15478	16957	15254
Mean	12193	13066	13097	10491	12895	14971	12785
P_0	10371	10976	10125				
P_1	12051	12[illegible]35	13798				
P_2	14157	15389	15366				

Serial no. : 20. **Block (Dist.) :** Jahanabad (Gaya). **Soil type :** Clay. **Years :** 1956 to 1959.

RESULTS :

(i) 11066 lb./ac. (ii) 688 lb./ac. (iii) Main effects of N, P and K and interaction N×P are highly significant. Other effects are not significant. (iv) Av. yield of tuber in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	9632	10461	10282	9274	10102	10998	10125
N_1	10931	11402	11312	10618	11402	11626	11215
N_2	11603	11872	12096	11715	11827	12029	11857
Mean	10722	11245	11230	10536	11110	11551	11066
P_0	10237	10685	10685				
P_1	10797	11290	11245				
P_2	11133	11760	11760				

Serial no. : 21. **Block (Dist.) :** Kawakole (Gaya). **Soil type :** Loam. **Years :** 1956 to 1959.

RESULTS :

(i) 16544 lb./ac. (ii) 1528 lb./ac. (iii) Main effects of N and P are highly significant. Other effects are not significant. (iv) Av. yield of tuber in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	14314	14918	14762	13754	14627	15613	14665
N_1	16173	16554	16912	15210	16666	17763	16546
N_2	18346	18637	18278	17405	19264	18592	18420
Mean	16278	16703	16651	15456	16852	17323	16544
P_0	15053	15568	15747				
P_1	16800	17002	16755				
P_2	16979	17539	17450				

Serial no. : 22. **Block (Dist.) :** Nabinagar (Gaya). **Soil type :** Loam. **Years :** 1957 to 1959.

RESULTS :

(i) 11145 lb./ac. (ii) 1561 lb./ac. (iii) Main effects of N and P are highly signifiant. Other effects are not significant. (iv) Av. yield of tuber in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	7997	8109	8019	7101	8042	8982	8041
N_1	10685	11424	11782	10035	11402	12454	11297
N_2	13888	14202	14202	12410	14426	15456	14097
Mean	10857	11245	11334	9848	11290	12297	11145
P_0	9834	9878	9834				
P_1	10819	11357	11693				
	11917	12499	12477				

Serial no. : 23. **Block (Dist.) :** Pakribhrawan (Gaya). **Soil type :** Sandy. **Years :** 1956 to 1958.

RESULTS :

(i) 20655 lb./ac. (ii) 2977 lb./ac. (iii) Main effects of N and P are highly significant. Other effects are not significant. (iv) Av. yield of tuber in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	14493	18659	18659	13866	17786	20160	17270
N_1	21190	22019	21997	19062	21056	25088	21735
N_2	22646	22490	23744	19398	23050	26432	22960
Mean	19443	21056	21467	17442	20631	23893	20655
P_0	16374	18323	17629				
P_1	20541	20474	20877				
P_2	21414	24371	25894				

Serial no. : 24. **Block (Dist.) :** Rajauli (Gaya). **Soil type :** Clay. **Years :** 1956 to 1958.

RESULTS :

(i) 8721 lb./ac. (ii) 806 lb./ac. (iii) Main effects of N and P are highly significant. Other effects are not significant. (iv) Av. yield of tuber in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	7571	8467	7862	7482	7795	8624	7967
N_1	8960	8602	8422	7571	8960	9453	8661
N_2	9363	9610	9632	8803	9565	10237	9535
Mean	8631	8893	8639	7952	8773	9438	8721
P_0	7974	7974	7907				
P_1	8624	9117	8579				
P_2	9296	9587	9430				

Serial no. : 25. **Block (Dist.) :** Sherghati (Gaya). **Soil type :** Loam. **Years :** 1956 to 1959.

RESULTS :

(i) 9415 lb./ac. (ii) 1404 lb./ac. (iii) Main effects of P and K are highly significant. Main effect of N is significant. (iv) Av. yield of tuber in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	6496	7123	8019	6339	7706	7594	7213
N_1	9206	10326	10618	9027	10394	10730	10050
N_2	10035	11402	11514	10618	11267	11066	10984
Mean	8579	9617	10050	8651	9789	9797	9415
P_0	8154	8803	9027				
P_1	8736	10147	10483				
P_2	8848	9901	10640				

Serial no. : 26. **Block (Dist.) :** Tekri (Gaya). **Soil type :** Sandy. **Years :** 1956 to 1959.

RESULTS :

(i) 14145 lb./ac. (ii) 1546 lb./ac. (iii) Main effects of N, P and interaction N×P are highly significant. Other effects are not significant. (iv) Av. yield of tuber in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	10506	10416	11066	8288	11245	12454	10663
N_1	14269	14694	14470	13866	15008	14560	14478
N_2	17450	17114	17315	16106	17360	18413	17293
Mean	14075	14075	14284	12753	14538	15142	14145
P_0	12477	12790	12992				
P_1	14224	14538	14851				
P_2	15523	14896	15008				

Serial no. : 27. **Block (Dist.) :** Warisaliganj (Gaya). **Soil type :** Clay. **Years :** 1956 to 1959.

RESULTS :

(i) 14933 lb./ac. (ii) 1776 lb./ac. (iii) Main effects of N, P and K are highly significant. Other effects are not significant. (iv) Av. yield of tuber in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	10259	10931	11581	10058	11043	11670	10924
N_1	15456	16397	16352	15053	16531	16621	16068
N_2	16464	18301	18659	17248	18256	17920	17808
Mean	14060	15210	15528	14120	15277	15404	14933
P_0	13507	14246	14605				
P_1	14246	15859	15725				
P_2	14426	15523	16262				

Serial no. : 28. **Block (Dist.) :** Wazirganj (Gaya). **Soil type :** Loam. **Years :** 1956 to 1959.

RESULTS :

(i) 12442 lb./ac. (ii) 3351 lb./ac. (iii) Main effects of N and P are highly significant. Other effects are not significant. (iv) Av. yield of tuber in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	9475	9946	10013	8870	9901	10662	9811
N_1	12656	13395	12925	12006	13194	13776	12992
N_2	13955	14717	14896	13552	14784	15232	14523
Mean	12029	12686	12611	11476	12626	13223	12442
P_0	10528	11917	11984				
P_1	12454	12589	12835				
P_2	13104	13552	13014				

Serial no. : 29. **Block (Dist.) :** Nawadah (Gaya). **Soil type :** Loam. **Years :** 1956 to 1959.

RESULTS :

(i) 10779 lb./ac. (ii) 1779 lb./ac. (iii) Main effects of N and P are highly significant. Other effects are not significant. (iv) Av. yield of tuber in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	7258	7750	7616	6944	7840	7840	7541
N_1	11805	11536	11469	10752	11805	12253	11603
N_2	13507	12970	13104	12746	13664	13171	13194
Mean	10857	10752	10729	10147	11103	11088	10779
P_0	9475	10640	10326				
P_1	11066	10976	11267				
P_2	12029	10640	10595				

Serial no. : 30. **Block (Dist.) :** Bachwara (Monghyr). **Soil type :** Sandy. **Years :** 1956 to 1959.

RESULTS :

(i) 10344 lb./ac. (ii) 1398 lb./ac. (iii) Main effects of N, P and K are highly significant. Other effects are not significant. (iv) Av. yield of tuber in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	8109	9296	9475	7258	9162	10461	8960
N_1	10102	10842	11334	9498	10797	11984	10759
N_2	10730	11738	11469	9654	11648	12634	11312
Mean	9647	10625	10759	8803	10536	11693	10344
P_0	8176	9162	9072				
P_1	10125	10371	11110				
P_2	10640	12342	12096				

Serial no. : 31. **Block (Dist.) :** Charibariar (Monghyr). **Soil type :** Clay. **Years :** 1957 to 1959.

RESULTS :

(i) 11068 lb./ac. (ii) 2719 lb./ac. (iii) Main effects of N, P and K are highly significant. Other effects are not significant. (iv) Av. yield of tuber in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	7773	8154	8557	7213	8310	8960	8161
N_1	10730	11133	11446	10259	11222	11827	11103
N_2	13283	14157	14381	12790	14269	14762	13940
Mean	10595	11148	11461	10087	11267	11850	11068
P_0	9699	10125	10438				
P_1	10752	11178	11872				
P_2	11334	12141	12074				

Serial no. : 32. **Block (Dist.) :** Jamui (Monghyr). **Soil type :** Loam. **Years :** 1956, 57 and 1959.

RESULTS

(i) 9756 lb./ac. (ii) 974 lb./ac. (iii) Main effect of N is highly significant. Main effect of P is significant. (iv) Av. yield of tuber in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	8422	8198	8086	7683	8176	8848	8235
N_1	10125	10416	10259	9318	10304	11178	10267
N_2	10506	10998	10797	9878	11043	11379	10767
Mean	9684	9871	9714	8960	9841	10468	9756
P_0	9072	9005	8803				
P_1	9632	9968	9923				
P_2	10349	10640	10416				

Serial no. : 33. **Block (Dist.) :** Sekhpura (Monghyr). **Soil type :** Loam. **Years :** 1956 to 1959.

RESULTS:

(i) 8701 lb./ac. (ii) 1987 lb./ac. (iii) Main effects of N, P and K are highly significant. Other effects are not significant. (iv) Av. yield of tuber in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	7011	7840	8198	6922	8109	8019	7683
N_1	8333	8893	9094	8445	8938	8938	8773
N_2	9229	9722	9990	8960	9878	10102	9647
Mean	8191	8818	9094	8109	8975	9020	8701
P_0	7392	8378	8557				
P_1	8557	8982	9386				
P_2	8624	9094	9341				

Serial no. : 34. **Block (Dist.) :** Teghra (Monghyr). **Soil type :** Clay. **Years :** 1956 to 1959

RESULTS :

(i) 12631 lb./ac. (ii) 2699 lb./ac. (iii) Main effects of N and P are highly significant. Other effects are not significant. (iv) Av. yield of tuber in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	10237	10707	8019	9072	8310	11581	9654
N_1	12432	13597	12947	12723	12768	13485	12992
N_2	14560	15277	15904	13485	15971	16285	15247
Mean	12410	13194	12290	11760	12350	13784	12631
P_0	11894	11670	11715				
P_1	9744	13440	13866				
P_2	15590	14470	11290				

Serial no. : 35. **Block (Dist.) :** Bairgania (Muzaffarpur). **Soil type :** Sandy. **Years :** 1957 to 1959.

RESULTS :

(i) 12833 lb./ac. (ii) 1581 lb./ac. (iii) Main effects of N, P and K are highly significant. Other effects are not significant. (iv) Av. yield of tuber in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	11984	11581	11738	10819	12410	12074	11768
N_1	12544	12835	12970	12253	12925	10931	12783
N_2	13597	14381	13866	12163	13798	15882	13948
Mean	12708	12932	12858	11745	13044	12962	12833
P_0	11379	12298	11558				
P_1	12858	12970	13306				
P_2	13888	13530	13709				

Serial no. : 36. **Block (Dist.) :** Hajipur (Muzaffarpur). **Soil type :** Sandy. **Years :** 1956 to 1959.

RESULTS :

(i) 10326 lb./ac. (ii) 1241 lb./ac. (iii) Main effects of N, P, K and interaction N×P are highly significant. Interaction P×K is significant. (iv) Av. yield of tuber in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	8669	8915	8624	7526	8982	9692	8736
N_1	10035	10349	10595	9117	10147	11715	10326
N_2	11558	12141	12051	10192	14112	13686	11917
Mean	10087	10468	10423	8945	11080	11691	10326
P_0	22064	8893	9094				
P_1	9766	10864	10371				
P_2	11648	11648	11805				

Serial no : 37. **Block (Dist.) :** Lalganj (Muzaffarpur). **Soil type :** Loam. **Years :** 1957 to 1959.

RESULTS :

(i) 13465 lb./ac. (ii) 1425 lb./ac. (iii) Main effects of N and P are highly significant. Other effects are not significant. (iv) Av. yield of tuber in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	11491	11222	11446	9117	11984	13059	11383
N_1	13933	13888	13866	12566	14179	14941	13896
N_2	15120	15120	15142	14022	15344	16016	15127
Mean	13515	13410	13485	11902	13836	14672	13465
P_0	11962	11760	11984				
P_1	13978	13821	13709				
P_2	14605	14650	14762				

Serial no : 38. **Block (Dist.) :** Mahua (Muzaffarpur). **Soil type :** Loam. **Years :** 1956 to 1959.

RESULTS :

(i) 8256 lb./ac. (ii) 612 lb./ac. (iii) Main effects of N, P and K are highly significant. Other effects are not significant. (iv) Av. yield of tuber in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	7056	7101	7213	6496	7034	7840	7123
N_1	7997	8243	8669	7661	8355	8893	8303
N_2	9117	9251	9654	8400	9386	10237	9340
Mean	8057	8198	8512	7519	8258	8990	8256
P_0	7370	7414	7997				
P_1	8019	8154	8602				
P_2	8781	9027	9162				

Serial no : 39. **Block (Dist.) :** Patepur (Muzaffarpur). **Soil type :** Sandy. **Years :** 1957 to 1959.

RESULTS :

(i) 8661 lb./ac. (ii) 4563 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of tuber in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	8467	6810	10707	6115	10349	9520	8661
N_1	7526	8310	8803	6698	9050	8893	8213
N_2	8736	9229	9363	7213	9184	10931	9109
Mean	8243	8116	9624	6675	9528	9781	8661
P_0	6720	6653	6653				
P_1	9542	8467	10573				
P_2	8467	9229	11648				

Serial no. : 40. **Block (Dist.) :** Runi Saidpur (Muzaffarpur). **Soil type :** Loam. **Years :** 1956, 57 and 1959.

RESULTS :

(i) 8280 lb./ac. (ii) 1176 lb./ac. (iii) Main effects of N and P are highly significant. Other effects are not significant. (iv) Av. yield of tuber in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	6944	7101	7123	6026	7056	8086	7056
N_1	8154	8602	8243	7728	8086	9184	8333
N_2	9386	9408	9565	8445	9363	10550	9453
Mean	8161	8370	8310	7380	8168	9273	8280
P_0	7392	7370	7437				
P_1	8064	8198	8243				
P_2	9027	9542	9251				

Serial no. : 41. **Block (Dist.) :** Sakra (Muzaffarpur). **Soil type :** Loam. **Years :** 1957 to 1959.

RESULTS :

(i) 9856 lb./ac. (ii) 1416 lb./ac. (iii) Main effects of N, P and K are highly significant. Other effects are not significant. (iv) Av. yield of tuber in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	7974	8624	9251	7862	8602	9386	8616
N_1	9520	9946	10774	8982	10214	11043	10080
N_2	9856	11402	11357	9542	11178	11894	10871
Mean	9117	9991	10461	8795	9998	10741	9856
P_0	11648	9005	5734				
P_1	8960	10461	10573				
P_2	6742	10506	15075				

Serial no. : 42. **Block (Dist.) :** Chapra (Saran). **Soil type :** Loam. **Years :** 1956 to 1959.

RESULTS :

(i) 9532 lb./ac. (ii) 1698 lb./ac. (iii) Main effects of N, P and K are highly significant. Other effects are not significant. (iv) Av. yield of tuber lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	6832	7840	7728	6048	7571	8781	7467
N_1	9162	10013	10371	8534	9654	11357	9849
N_2	10461	11491	11894	10438	11155	12253	11282
Mean	8818	9781	9998	8340	9460	10797	9532
P_0	7773	8534	8714				
P_1	8938	9744	9699				
P_2	9744	11066	11581				

Serial no. : 43. **Block (Dist.) :** Digwara (Saran). **Soil type :** Clay. **Years :** 1956, 57 and 1959.

RESULTS :

(i) 7716 lb./ac. (ii) 1124 lb./ac. (iii) Main effects of N, P and K are highly significant. Other effects are not significant. (iv) Av. yield of tuber in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	6205	6630	6854	5690	6899	7101	6563
N_1	7302	8019	8176	7235	7952	8310	7832
N_2	8400	8915	8938	8064	8803	9386	8751
Mean	7302	7855	7989	6996	7885	8266	7716
P_0	6810	6989	7190				
P_1	7235	8086	8333				
P_2	7862	8490	8445				

Serial no. : 44. **Block (Dist.) :** Gopalgunj (Saran). **Soil type :** Loam. **Years :** 1956 to 1959.

RESULTS :

(i) 7472 lb./ac. (ii) 1299 lb./ac. (iii) Main effects of N, P, K and interaction N×P are highly significant. Other effects are not significant. (iv) Av. yield of tuber in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	5219	6048	5779	4928	5891	6227	5682
N_1	7258	7616	8019	6698	7974	8221	7631
N_2	8669	9162	9475	7840	9318	10147	9102
Mean	7049	7609	7758	6489	7728	8198	7472
P_0	6182	6608	6675				
P_1	7034	8064	8086				
P_2	7930	8154	8512				

Serial no. 45. **Block (Dist.) :** Kuchaikot (Saran). **Soil type :** Loam. **Years :** 1956 to 1959.

RESULTS :

(i) 6374 lb./ac. (ii) 952 lb./ac. (iii) Main effects of N, P and K are highly significant. Other effects are not significant. (iv) Av. yield of tuber in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	4278	5130	5152	4144	5242	5174	4853
N_1	5690	6698	6854	5779	6496	6966	6414
N_2	7213	7862	8490	6653	8378	8534	7855
Mean	5727	6563	6832	5525	6705	6891	6374
P_0	5018	5645	5914				
P_1	5936	6989	7190				
P_2	6227	7056	7392				

Serial no. : 46. **Block (Dist.) :** Maharajganj (Saran). **Soil type :** Clay. **Years :** 1956 to 1959

RESULTS :

(i) 12768 lb./ac. (ii) 1429 lb./ac. (iii) Main effects of N, P and interaction N×K are highly significant. Other effects are not significant. (iv) Av. yield of tuber in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	9363	10438	10326	9184	10192	10752	10042
N_1	13037	12410	13418	12253	12858	13754	12955
N_2	15098	15546	15277	14403	15210	16307	15307
Mean	12499	12798	13007	11947	12753	13604	12768
P_0	11872	12006	11961				
P_1	12589	12499	13171				
P_2	13037	13888	13888				

Serial no. : 47. **Block (Dist.)** Mirganj (Saran). **Soil type :** Loam. **Years :** 1956 57 and 1959.

RESULTS :

(i) 7098 lb./ac. (ii) 800 lb./ac. (iii) Main effects of N, P and K are highly significant. Other effects are not significant. (iv) Av. yield of tuber in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	5197	5488	5555	4682	5712	5846	5413
N_1	6854	7414	7616	6922	7370	7594	7295
N_2	8198	8870	8691	7907	8803	9050	8586
Mean	6746	7257	7287	6504	7295	7497	7098
P_0	6160	6541	6810				
P_1	6944	7325	7616				
P_2	7146	7907	7437				

Serial no. : 48. **Block (Dist.) :** Mufassil (Saran). **Soil type :** Clay . **Years :** 1957 to 1959.

RESULTS :

(i) 10306 lb./ac. (ii) 1702 lb./ac. (iii) Main effects of N, P and K are highly significant. Other effects are not significant. (iv) Av. yield of tuber in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	8534	8736	9184	7773	8579	10102	8818
N_1	9162	10550	10304	8400	9834	11782	10005
N_2	10998	12499	12790	10819	11894	13574	12099
Mean	9565	10595	10759	8997	10102	11819	10306
P_0	8534	9296	9162				
P_1	9050	10573	10685				
P_2	11110	11917	12432				

Serial no. : 49. **Block (Dist.) :** Siwan (Saran). **Soil type :** Loam. **Years :** 1956, 57 and 1959.

RESULTS :

(i) 11992 lb./ac. (ii) 1183 lb./ac. (iii) Main effects of N, P and K are highly significant. Other effects are not significant. (iv) Av. yield of tuber in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	9968	9834	10774	8982	10371	11222	10192
N_1	11469	12163	12186	10909	11939	12970	11939
N_2	13306	14134	14090	12813	13642	15075	13843
Mean	11581	12044	12350	10901	11984	13089	11992
P_0	10528	13059	11357				
P_1	11558	12141	12253				
P_2	12656	13171	13440				

Serial no. : 50. **Block (Dist.):** Arrah (Shahbad). **Soil type :** Loam. **Years :** 1956, 57 and 1959.

RESULTS :

(i) 11232 lb./ac. (ii) 1084 lb./ac. (iii) Main effects of N, P, K and interactions N×P and N×K are highly significant. (iv) Av. yield of tuber in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	6720	7213	7728	6250	7302	8109	7220
N_1	10371	12074	12566	9520	12410	13082	11670
N_2	13709	15075	15635	12678	15658	16083	14806
Mean	10267	11454	11976	9483	11790	12425	11232
P_0	8378	9610	10461				
P_1	11110	12029	12230				
P_2	11312	12723	13238				

Serial no. : 51. **Block (Dist.) :** Bhabhua (Shahbad). **Soil type :** Loam. **Years :** 1956, 58 and 1959.

RESULTS :

(i) 10060 lb./ac. (ii) 1122 lb./ac. (iii) Main effects of N, P and K are highly significant. Other effects are not significant. (iv) Av. yield of tuber in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	7549	8579	8848	7370	8714	8893	8326
N_1	9050	10954	11782	9139	10886	11760	10595
N_2	9990	11715	12074	9766	11760	12253	11260
Mean	8863	10416	10901	8758	10453	10969	10060
P_0	7930	9072	9274				
P_1	9363	10595	11402				
P_2	9296	11581	12029				

Serial no. : 52. **Block (Dist) :** Bihta (Shahbad). **Soil type :** Sandy. **Years :** 1958 and 1959.

RESULTS :

(i) 13828 lb /ac. (ii) 934 lb /ac. (iii) Main effects of N, P and K are highly significant. Other effects are not significant. (iv) Av. yield of tuber in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	11021	11581	12522	10662	12141	12320	11708
N_1	13843	15187	14403	13597	14896	14941	14478
N_2	14336	15658	15904	14045	15568	16285	15299
Mean	13067	14142	14276	12768	14202	14515	13828
P_0	11850	13149	13306				
P_1	13731	13978	14784				
P_2	13619	15187	14739				

Serial no. : 53. **Block (Dist.) :** Bikramganj (Shahbad). **Soil type :** Loam. **Years :** 1956 and 1959.

RESULTS :

(i) 10929 lb./ac. (ii) 1622 lb./ac. (iii) Main effects of N and P are highly significant. Other effects are not significant. (iv) Av. yield of tuber in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	7907	9453	8848	7168	9318	9722	8736
N_1	10573	11693	11178	9677	11402	12365	11148
N_2	13261	11984	13462	11334	13014	19381	12902
Mean	10580	11043	11163	9393	11245	12156	10929
P_0	8915	10326	8938				
P_1	10864	11088	11782				
P_2	11962	11715	12768				

Serial no. : 54. **Block (Dist.) :** Buxar (Shahbad). **Soil type :** Loam. **Years :** 1956 to 1959.

RESULTS :

(i) 12228 lb./ac. (ii) 2614 lb./ac. (iii) Main effects of N, P and K are highly significant. (iv) Av. yield of tuber in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	8848	10349	10058	8579	10102	10573	9752
N_1	12566	13216	12634	12298	12813	13306	12805
N_2	13395	14493	14493	13664	14448	14269	14127
Mean	11603	12686	12395	11514	12454	12716	12228
P_0	11178	11738	11626				
P_1	11782	12813	12768				
P_2	11850	13507	12790				

Serial no. : 55. **Block (Dist.) :** Dumraon (Shahbad). **Soil type :** Loam. **Years :** 1956 to 1959.

RESULTS :

(i) 14530 lb./ac. (ii) 1270 lb./ac. (iii) Main effects of N and K are highly significant. Other effects are not significant. (iv) Av. yield of tuber in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	10886	11379	11856	10282	11514	12320	11372
N_1	14918	15053	15277	14336	15075	15837	15083
N_2	16934	17696	16778	16867	16576	17965	17136
Mean	14246	14709	14635	13828	14388	15374	14530
P_0	13373	13776	14336				
P_1	13395	14784	14986				
P_2	15971	15568	14582				

Serial no. : 56. **Block (Dist.) :** Durgawati (Shahbad). **Soil type :** Loam. **Years :** 1956 to 1959.

RESULTS :

(i) 10940 lb./ac. (ii) 1716 lb./ac. (iii) Main effects of N, P and K are highly significant. Other effects are not significant. (iv) Av. yield of tuber in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	7034	7795	8019	6250	8042	8557	7616
N_1	10416	12006	11514	10393	11984	11558	11312
N_2	13149	14336	14202	12656	14269	14762	13892
Mean	10200	11379	11245	9766	11428	11626	10940
P_0	9766	10013	9520				
P_1	10282	12029	11984				
P_2	10550	12096	12230				

Serial no. : 57. **Block (Dist.) :** Koilwar (Shahbad). **Soil type :** Sandy loam. **Years :** 1956 to 1959.

RESULTS :

(i) 10321 lb./ac. (ii) 1008 lb./ac. (iii) Main effects of N, P and interactions N×P and N×K are highly significant. Main effect of P is significant. (iv) Av. yield of tuber in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	6205	7907	8646	6630	7930	8198	7586
N_1	9923	11379	11021	9699	11581	11043	10774
N_2	11962	12566	13283	11155	12589	14067	12604
Mean	9364	10617	10984	9161	10700	11103	10321
P_0	8243	9296	9946				
P_1	9654	10909	11536				
P_2	10192	11648	11469				

Serial no. : 58. **Block (Dist.) :** Kudra (Shahbad). **Soil type :** loam. **Years :** 1957 to 1959.

RESULTS

(i) 12300 lb./ac. (ii) 1873 lb./ac. (iii) Main effects of N, P and K are highly significant. Other effects are not significant. (iv) Av. yield of tuber in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	8310	8915	10438	8579	8579	10506	9221
N_1	10886	12410	12813	10550	12141	13418	12036
N_2	14873	15792	16262	15366	15635	15926	15642
Mean	11357	12372	13171	11498	12118	13283	12300
P_0	10573	11290	12634				
P_1	11334	12096	12925				
P_2	12163	13731	13955				

Serial no. : 59. **Block (Dist.) :** Mohania (Shahbad). **Soil type :** Sandy. **Years :** 1956 to 1959.

RESULTS :

(i) 9186 lb./ac. (ii) 990 lb./ac. (iii) Main effects of N, P and K are highly significant. Other effects are not significant. (iv) Av. yield of tuber in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	7034	7750	7325	6541	7549	8019	7370
N_1	9229	9722	9946	8557	10237	10102	9632
N_2	10035	10618	11021	9520	10774	11379	10558
Mean	8766	9363	9431	8206	9520	9833	9186
P_0	8198	8042	8378				
P_1	8781	9878	9901				
P_2	9318	10170	10013				

Serial no. : 60. **Block (Dist.) :** Piro (Shahbad). **Soil type :** Sandy. **Years :** 1956, 1958 and 1959.

RESULTS :

(i) 10876 lb./ac. (ii) 2352 lb./ac. (iii) Main effects of N, P and K are highly significant. Other effects are not significant. (iv) Av. yield of tuber lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	6429	7728	6787	5981	7146	7818	6981
N_1	11110	12163	12589	9027	13082	13754	11954
N_2	12768	13731	14582	11178	14538	15366	13694
Mean	10102	11207	11153	8729	11589	12313	10876
P_0	8109	9139	8938				
P_1	10595	12499	11670				
P_2	11603	11984	13356				

Serial no. : 61. **Block (Dist.) :** Sasaram (Shahbad). **Soil type :** Loam. **Years :** 1956 to 1959.

RESULTS :

(i) 13214 lb./ac. (ii) 1660 lb./ac. (iii) Main effects of N, P and K are highly significant. Other effects are not significant. (iv) Av. yield of tuber in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	9968	10214	10192	8534	10662	11178	10125
N_1	13283	14224	14157	12096	14717	14851	13888
N_2	15098	16262	15523	13888	16128	16867	15628
Mean	12783	13567	13291	11506	13836	14299	13214
P_0	11334	11894	11290				
P_1	13306	14067	14134				
P_2	13709	14739	14448				

Serial no. : 62. **Block (Dist.) :** Shahpur (Shahbad). **Soil type :** Loam. **Years :** 1956 to 1959.

RESULTS :

(i) 13599 lb./ac. (ii) 1151 lb./ac. (iii) Main effects of N, P and K are highly significant. Other effects are not significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	10662	11446	11693	9744	11760	12298	11267
N_1	13731	14224	14246	12835	14381	14986	14067
N_2	15389	15411	15590	14112	15389	16890	15464
Mean	13261	13694	13843	12230	13843	14725	13599
P_0	12074	12320	12298				
P_1	13530	13933	14067				
P_2	14179	14829	15165				

Crop :- Potato ***(Kharif).*** **Ref :- Bh. 58(203).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'C'.**

Object :—To find out the effect of different depths of planting on Potato.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Red laterite. (b) Refer soil analysis, Kanke. (iii) 21.7.1958. (iv) (a) 2 ploughings. followed by 1 hand spading. (b) Planting on ridges. (c) N.A. (d) 18″×9″. (e) 1. (v) 70 lb./ac. of N as A/S+70 lb./ac. of P_2O_5 as Super+50 lb./ac. of K_2O as Mur. Pot. (vi) ON—2236. (vii) Unirrigated. (viii) 2 hand weedings. (ix) 22.0″. (ix) 25, 26.9.1958.

2. TREATMENTS :

3 depths of planting : D_0=Control (ground level), D_1=3″ below ridge and D_2=3″ below ground level.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) 14′×8′. (b) 13′×7′. (v) 6″×6″. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Attack of blight borers. No control measures. (iii) Yield of Potato. (iv) (a) to (c) N.A. (v) (a) Neterhat. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 9474 lb./ac. (ii) 1053 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of tuber in lb./ac.

Treatment	D_0	D_1	D_2
Av. yield	10288	9139	8996

S.E./mean = 429.9 lb./ac.

Crop :- Potato. **Ref :- Bh. 55 (28).**

Site :- Govt. Agri. Farm, Neterhat. **Type :- 'C'.**

Object :—To test the effect of spacing and method of planting Potato.

1. BASAL CONDITIONS :

(i) (a) Oats+Pea—Potato—Oats+Peas. (b) Oats and Peas. (c) 5 md./ac. of Castor Cake+1 md./ac. of Super. (ii) (a) Lateritic clay. (b) N.A. (iii) 17.7.1955. (iv) (a) 2 ploughings by *desi* plough. (b) As per treatments. (c) N.A. (d) As per treatments. (e) N.A. (v) 5 md./ac. of castor cake+1 md./ac. of Super+1 md./ac. of A/S at the time of planting. 1 md./ac. of Super+1 md./ac. of A/S+1 md./ac. of Mur. Pot. at the time of first earthing and ½ md./ac. of Super+½ md./ac. of A/S+½ md./ac. of Mur. Pot. at the time of second earthing. (vi) Upto date (early). (vii) Unirrigated. (viii) Nil. (ix) 44.9″. (x) 5.10.1955.

2. TREATMENTS :

3 spacings : $S_1=2'$ with single line planting, $S_2=3'$ with single line planting and $S_3=2\frac{1}{2}'$ with duoble line planting.

3. DESIGN .

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 5. (iv) (a) $16\frac{1}{2}'\times13'$. (b) $12\frac{1}{2}'\times9'$. (v) $2'\times2'$. (vi) Yes.

4. GENERAL :

(i) Good. (ii) No. (iii) Potato yield. (iv) (a) and (b) No. (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3667 lb./ac. (ii) 705.7 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of tuber in lb./ac.

Treatment	S_1	S_2	S_3
Av. yield	3684	2489	4829

S.E./mean = 315.6 lb./ac.

Crop :- Potato. **Ref :- Bh. 55(29).**

Site :- Govt. Agri. Farm, Neterhat. **Type :- 'C'.**

Object :—To test the effect of spacing and method of planting Potato.

1. BASAL CONDITIONS :

(i) (a) Oats and Pea—Potato—Oats and Pea. (b) Oats and Pea. (c) 5 md./ac of Castor cake+1 md./ac. of Super. (ii) (a) Clayey loam. (b) N.A. (iii) 17.7.1955. (iv) (a) 2 ploughings by *desi* plough. (b) As per treatments. (c) N.A. (d) As per treatments. (e) N.A. (v) 5 md./ac. of castor cake+1 md./ac. of Super+1 md./ac. of A/S at the time of planting. 1 md./ac. of Super+1 md./ac. of A/S+1 md./ac. of Mur. Pot. at the time of first earthing and ½ md./ac. of Super+½ md./ac. of A/S+½ md./ac. of Mur. Pot. at the time of second earthing. (vi) Up to date (early). (vii) Unirrigated. (viii) Nil. (ix) 44.9″. (x) 5.10.1955.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 55(28) above.

5. RESULTS :

(i) 546.9 lb./ac. (ii) 583.8 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of tuber in lb./ac.

Treatment	S_1	S_2	S_3
Av. yield	5844	4371	6193

S.E./mean = 261.1 lb./ac.

Crop :- Potato ***(Kharif).*** **Ref :- Bh. 58(200).**

Site :- Govt. Agri. Farm, Neterhat. **Type :- 'C'.**

Object :—To find out the effect of different depths of planting on Potato.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Red laterite. (b) N.A. (iii) 28.7.1958. (iv) (a) 2 ploughings by *desi* plough followed by 1 spading by hand. (b) Planting on ridge. (c) N.A. (d) 18″×9″. (e) 1. (v) 3 md./ac. of A/S+4 md./ac. of Super+$1\frac{1}{2}$ md./ac. of Mur. Pot. (vi) ON—2236. (vii) Unirrigated. (viii) 2 weedings by hand. (ix) 27.08″. (x) 13.10.1958.

2. TREATMENTS :

Same as in expt. no. 58(203) on page 570.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) 17′×11′. (b) 16′×10′. (v) 6″×6″. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) Nil. (iii) Yield of Potato. (iv) (a) to (c) N.A. (v) (a) Kanke. (b) N.A (vi) and (vii) Nil.

5. RESULTS :

(i) 7779 lb./ac. (ii) 2197 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of tuber in lb./ac.

Treatment	D_0	D_1	D_2
Av. yield	7878	9460	5999

S.E /mean = 896.9 lb./ac.

Crop -- Potato. **Ref :- Bh. 56(223).**

Site :- Agri. Res. Instt., Pusa. **Type :- 'CV'.**

Object :—To study the effect of different varieties and cultivation practices on Potato.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Lady's finger. (ii) (a) Sandy loam. (b) N.A. (iii) 15.11.1956. (iv) (a) 3 ploughings by *desi* plough. (b) On ridge. (c) 2 to 3 md./ac. (d) 2′×2′. (e) 1. (v) Nil. (vi) As per treatments. (vii) Irrigated. (viii) 2 earthings and 2 hoeings. (ix) 2.18″. (x) 13.2.1957.

2. TREATMENTS :

All combinations of (1) and (2).

(1) 11 varieties : V_1=Furodi, V_2=Industrial, V_3=No—1187, V_4=Alpha, V_5=Phulwa, V_6=Mulch, V_7=No—1202, V_8=No—295, V_9=D.R.R., V_{10}=Bettiah and V_{11}=Up to date.

(2) 2 Types of cultivation : C_1=Ordinary type and C_2=Mulching type of cultivation.

3. DESIGN :

(i) Fact in R.B.D. (ii) (a) 22. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 12′×4′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Potato yield. (iv) (a) 1956 –1957 (modified). (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 9865 lb./ac. (ii) 1465 lb./ac. (iii) Only main effect of V is highly significant. (iv) Av. yield of tuber in lb./ac.

	V_1	V_2	V_3	V_4	V_5	V_6	V_7	V_8	V_9	V_{10}	V_{11}	Mean
C_1	8736	11491	8467	11290	9072	7907	11872	12141	8669	6966	10170	9707
C_2	6474	10438	9632	12902	11805	7213	11939	11603	9610	7414	11222	10022
Mean	7605	10964	9050	12096	10438	7560	11906	11872	9140	7190	10696	9865

S.E. of C marginal mean = 255.0 lb./ac.
S.E. of V marginal mean = 598.1 lb./ac.
S.E. of body of table = 845.8 lb./ac.

Crop :- Potato *(Rabi)*. **Ref :- Bh. 57(217).**
Site :- Agri. Res. Instt., Pusa. **Type :- 'CV'.**

Object :—To study the effect of different varieties and cultivation practices on Potato.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Lady's finger. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 5.11.1957. (iv) (a) 3 ploughings by *desi* plough. (b) On ridge. (c) 2 to 3 mds./ac. (d) 2′×2′. (e) 1. (v) 20 sr./replication of compost. (vi) As per treatments. (vii) Irrigated. (viii) 1 earthing and 3 hoeings. (ix) 6.28″. (x) 8.2.1958.

2. TREATMENTS :

All combinations of (1) and (2).
(1) 8 varieties : V_1= Furodi, V_2=Alpha, V_3=Phulwa, V_4=No—1202, V_5=No.—295, V_6=D.R.R., V_7=Bettiah and V_8=Up to date.
(2) 2 types of cultivations : C_1=Ordinary and C_2=Mulching.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 16. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 12′×2′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Attack of aplinka beetle ; 19.5% emulsion of Endrin sprayed. (iii) Potato yield. (iv) (a) 1956—1957 (treatments modified). (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 8848 lb./ac. (ii) 1519 lb./ac. (iii) Main effects of V and C are highly significant. Interaction C×V is not significant. (iv) Av. yield of tuber in lb./ac.

	V_1	V_2	V_3	V_4	V_5	V_6	V_7	V_8	Mean
C_1	10438	9610	7101	10125	9229	10819	6429	11962	9464
C_2	8534	9296	5667	8624	8691	9386	6877	8781	8232
Mean	9486	9453	6384	9374	8960	10102	6653	10372	8848

S.E. of C marginal mean = 310.1 lb./ac.
S.E. of V marginal mean = 620.1 lb./ac.
S.E. of body of table = 877.0 lb./ac.

Crop :- Potato *(Rabi)*. **Ref :- Bh. 56(231).**
Site :- Irrigation Res. Sub-Stn., Bikramganj. **Type :- 'I'.**

Object :—To find out the suitable irrigation practice for Potato.

1. BASAL CONDITIONS :

(i) Nil. (b) Lady's finger and sponge gourd. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 29.11.1956. (iv) (a) 6 ploughings. (b) On ridge. (c) 8 md./ac. (d) 2′ between rows. (e) N.A. (v) N.A. (vi) D.R.R. (vii) As per treatments. (viii) Earthing up. (ix) 2.59″. (x) 4.3.1957.

2. TREATMENTS :

All combinations of (1) and (2)+a control

(1) 2 levels of irrigations : $L_1=3$ ac. inches and $L_2=5$ ac. inches.

(2) 2 intervals of irrigations $I_1=10$ days and $I_2=20$ days.

3 DESIGN :

(i) Fact. in R.B.D. (ii) (a) 5. (b) N.A. (iii) 3. (iv) (a) 18′×10′. (b) 10′×4′. (v) 4′×3′. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Potato yield. (iv) (a) to (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 12796 lb./ac. (ii) 4371 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of tuber in lb./ac.

Control = 11574 lb./ac.

	L_1	L_2	Mean
I_1	17407	6674	12040
I_2	15260	13067	14164
Mean	16334	9870	13102

S.E. of any marginal mean = 1784 lb./ac.

S.E. of body of table or control = 2524 lb./ac.

Crop :- Potato *(Rabi)*. **Ref :- Bh. 59(176).**

Site :- Irrigation Res. Sub-Stn., Bikramganj. **Type :- 'I'.**

Object :—To determine the effect of irrigation at different intervals on Potato.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 7 to 12.12.1959. (iv) (a) 4 ploughings, levelling and making ridges. (b) On ridges. (c) 10 mds. and 8 srs./ac. (d) 18″×9″. (e) N.A. (v) 75 lb./ac. of N as A/S+80 lb./ac. of P_2O_5 as Super+80 lb./ac. of K_2O as Mur. Pot., half at sowing and half at earthing up. (vi) D.R.R. (vii) As per treatments. (viii) N.A. (ix) 2.55″. (x) 17 to 21.4.1960.

. TREATMENTS :

4 intervals of irrigation : $I_1=7$, $I_2=10$, $I_3=13$ and $I_4=16$ days.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) $142\frac{1}{2}'\times12'$. (b) $139\frac{1}{2}'\times9'$. (v) One row along the length. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) N.A. (iii) Potato yield. (iv) (a) 1959—N.A. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 12207 lb./ac. (ii) 2151 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of tuber in lb./ac.

Treatment	I_1	I_2	I_3	I_4
Av. yield	13143	11704	12228	11752

S.E./mean = 878.1 lb./ac.

Crop :- Potato *(Rabi)*. **Ref :- Bh. 58(207).**

Site :- Irrigation Res. Stn., Madhepura. **Type :- 'I'.**

Object :—To determine the effect of irrigation at different intervals on Potato.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Maize+*Kalai*. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Madhepura. (iii) 1.12.1958. (iv) (a) 7 ploughings, making of ridges by spade. (b) On ridges. (c) 9 md./ac. (d) 18″×6″. (e) N.A. (v) 100 md./ac. of F.Y.M. (vi) D.R.R. (vii) As per treatments. (viii) 1 hand weeding and 2 earthings. (ix) 3.63″. (x) 17.3.1959.

2. TREATMENTS

4 intervals of irrigations : I_0=Control, I_1=10, I_2=15 and I_3=20 days.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) 100′×11′ (b) 94′×7½′. (b) 3′×1¾′. (v) Yes.

4. GENERAL :

(i) N.A. (ii) Late blight incidence ; no control measures taken. (iii) Potato yield. (iv) (a) 1958—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 5217 lb./ac. (ii) 1431 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of tuber in lb./ac.

Treatment	I_0	I_1	I_2	I_3
Av. yield	4448	5389	5541	5491

S.E./mean = 640.0 lb./ac.

Crop :- Potato *(Rabi)*. **Ref :- Bh. 58(215).**

Site :- Irrigation Res., Stn. Madhepura. **Type :- 'I'.**

Object :—To determine the effect of irrigation at different intervals on Potato.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Madhepura. (iii) 29.11.1958. (iv) (a) 7 ploughings, preparation of ridges by spade. (b) On ridges. (c) 9 md./ac. (d) 18″×6″. (e) —. (v) Nil. (vi) D.R.R. (vii) As per treatments. (viii) 1 weeding and 2 earthings. (ix) 3.10″. (x) 12, 13.3.1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(207) above.

5. RESULTS :

(i) 12958 lb./ac. (ii) 1338 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of tuber in lb./ac.

Treatment	I_0	I_1	I_2	I_3
Av. yield	11464	13193	12938	14235

S.E./mean = 598.4 lb./ac.

Crop :- Potato *(Rabi)*. **Ref :- Bh. 59(137).**

Site :- Irrigation Res. Stn., Madhepura. **Type :- 'I'.**

Object :—To determine the effect of irrigation at different intervals on Potato.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Maize+*Kalai*. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Madhepura. (iii) 22.11.1959. (iv) (a) 7 ploughings, preparation of ridges by spade. (b) On ridges. (c) 9 mds./ac. (d) 18″×6″. (e) N.A. (v) Nil. (vi) D.R.R. (vii) As per treatments. (viii) Hand weeding once by *khurpi*, earthing up twice. (ix) Nil. (x) 29.2.1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(207) on page 575.

5. RESULTS :

(i) 14559 lb./ac. (ii) 1506 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of tuber in lb./ac.

Treatment	I_0	I_1	I_2	I_3
Av. yield	13650	14412	14463	15709

S.E./mean = 614.8 lb./ac.

Crop :- Potato *(Rabi)*. **Ref :- Bh. 59(143).**

Site :- Irrigation Res. Stn., Madhepura. **Type :- 'I'.**

Object :—To determine the effect of irrigation at different intervals on Potato.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Maize+*Kalai*. (c) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super+20 lb./ac. of K_2O as Mur. Pot. (ii) (a) Sandy loam. (b) Refer soil analysis, Madhepura. (iii) 23.11.1959. (iv) (a) 7 ploughings, preparation of ridges. (b) On ridges. (c) 9 mds./ac. (d) 18″×6″. (e) N.A. (v) 375 lb./ac. of A/S+500 lb./ac. of Super+160 lb./ac. of Mur. Pot. (vi) D.R.R. (vii) As per treatment. (viii) Hand weeding, earthing up twice. (ix) 1.55″. (x) 3.3.1960.

2. TREATMENTS to 4. GENERAL:

Same as in expt. no. 58(207) on page 575.

5. RESULTS :

(i) 14003 lb./ac. (ii) 491.2 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of tuber in lb./ac.

Treatment	I_0	I_1	I_2	I_3
Av. yield	13802	13828	13319	15061

S.E./mean = 219.7 lb./ac.

Crop :- Potato *(Kharif)*. **Ref :- Bh. 57(223).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'D'.**

Object :—To know the comparative efficacy of different insecticides on Potato.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Red laterite. (b) Refer soil analysis, Kanke. (iii) 23.6.1957. (iv) (a) 3 ploughings and then ridges made by spade. (b) On ridges. (c) 16.25 md./ac. (d) 24″×10″. (e) 1. (v) Mixture of castor cake, A/S and Super in equal proportions at 1sr./plot before sowing. (vi) Local. (vii) Unirrigated. (viii) 2 interculturings by spade. (ix) 39.21″. (x) 13.10·1957.

2. TREATMENTS :

8 insecticides : D_0=Control, D_1=D.D.T. 10% dust at 40 lb./ac. mixed with soil before sowing. D_2=B.H.C. 5% dust at 40 lb./ac. mixed with soil before sowing. D_3=Chlardane 5% dust at 40 lb./ac. mixed with soil before sowing. D_4=Aldrin 5% dust at 40 lb./ac. mixed with soil before sowing. D_5=Early scorching of land by burning wood about 1 month before sowing, D_6=Late scorching of land by burning wood about 2 to 3 days before sowing and D_7=D.D. soil fumigant at 20 gallons/ac. one month before sowing.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 18′×9′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Attack of Nomatode, controlled as per treatments. (iii) Yield of Potato. (iv) (a) 1957—1959. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 3306 lb /ac. (ii) 727.7 lb./ac. (iii) Treatment difference are significant. (iv) Av. yield of tuber in lb./ac.

Treatment	D_0	D_1	D_2	D_3	D_4	D_5	D_6	D_7
Av. yield	3682	2299	4874	4563	2040	2835	2627	3526

S E./mean = 363.8 lb./ac.

Crop :- Potato *(Kharif)*. **Ref :- Bh. 58(248).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'D'.**

Object :—To know the comparative efficacy of different insecticides on Potato.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Potato. (c) 1 sr./ac. of mixture of castor cake, A/S and Super in equal proportions to each plot. (ii) (a) Red laterite. (b) Refer soil analysis, Kanke. (iii) 18.7.1958. (iv) 3 ploughings and ridges made by spade. (b) On ridges. (c) 16.25 md./ac. (d) 24″×10″, (e) 1. (v) 1 sr./ac. of mixture of castor cake, A/S and Super in equal proportions to each plot. (vi) Local. (vii) Unirrigated. (viii) 2 interculturings by spade. (ix) 30.0″. (x) 11.10.1958.

2. TREATMENTS :

8 insecticides : D_0=Control (no treatment), D_1=D.D.T. 10% dust at 40 lb./ac. mixed with soil before sowing, D_2=B.H.C. 5% dust at 40 lb./ac. mixed with soil before sowing, D_3=Chlordane 5% dust at 40 lb./ac. mixed with soil before sowing, D_4=Aldrin 5% dust at 40 lb./ac. mixed with soil before sowing, D_5=Early scorching of land by burning wood 1 month before sowing, D_6=Basudin 20% at 5 lb./ac. (emulsion) a day or 2 before sowing and D_7=D.D. soil fumigant at 20 gallons/ac. one month before sowing.

3, DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N A. (iii) 4. (iv) (a) N.A. (b) 9′×18′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Incidence of Nomatode ; controlled as per treatments. (iii) Yield of Potato. (iv) (a) 1957—1959. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 3456 lb./ac. (ii) 320.9 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of tuber in lb./ac.

Treatment	D_0	D_1	D_2	D_3	D_4	D_5	D_6	D_7
Av. yield	3760	3925	3538	2707	2271	4254	2822	4369

S.E./mean = 160.4 lb./ac.

Crop :- Potato *(Kharif)*. **Ref :- Bh. 59(171).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'D'.**

Object :—To know the comparative efficacy of different insecticides on Potato.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Potato. (c) 1 sr. of mixture of castor cake, A/S and Super in equal proportions to each plot before sowing. (ii) (a) Red laterite. (b) Refer soil analysis, Kanke. (iii) 8.7.1959. (iv) (a) 4 ploughings and ridges made by spade. (b) On ridges. (c) 13 md./ac. (d) 29″×10″. (e) 1. (v) 1 sr. of mixture of castor cake, A/S and Super in equal proportions to each plot before sowing. (vi) Local. (vii) Unirrigated. (viii) 2 interculturings by spade. (ix) 29.9″. (x) 5.10.1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(248) on page 577.

5. RESULTS :

(i) 3502 lb./ac. (ii) 892.7 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of tuber in lb./ac.

Treatment	D_0	D_1	D_2	D_3	D_4	D_5	D_6	D_7
Av. yield	3197	3137	3128	3578	3526	3759	3819	3871

S.E./mean = 446.4 lb./ac.

Crop :- Cabbage *(Rabi)*. **Ref :- Bh. 56(227).**

Site :- Agri. Res. Instt., Pusa. **Type :- 'M'.**

Object :—To study the effect of N, P and K on Cabbage.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Ridge gourd+sponge gourd. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 26.10.1956/4.12.1956. (iv) (a) 2 ploughings by *desi* plough. (b) Line planting. (c) 6 oz./ac. (d) 2′×2′. (e) 1. (v) 10 C.L./ac. of F.Y.M. (vi) Florida Header. (vii) Irrigated. (viii) 2 weedings and 2 earthings. (ix) 6.24″. (x) 14.3.1956 to 5.4.1956.

2. TREATMENTS :

All combinations of (1), (2) and (3)+a control (no manure).

(1) 3 levels of N as A/S : N_1=40, N_2=80 and N_3=100 lb./ac.
(2) 2 levels of P_2O_5 as Super : P_0=0 and P_1=40 lb./ac.
(3) 2 levels of K_2O as Mur. Pot. : K_1=40 and K_2=80 lb./ac.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 13. (b) N.A. (iii) 4. (iv) 12′×7′6″. (b) 10′×6′. (v) 1′×¾′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of Cabbage. (iv) (a) 1956—1959. (b) No. (c) Nil. (v) (a) Sabour. (b) N A. (vi) and (vii) Nil.

5. RESULTS :

(i) 19069 lb./ac. (ii) 6180 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of Cabbage in lb./ac.

Control = 13619 lb./ac.

	N_1	N_2	N_3	Mean	K_1	K_2
P_0	19925	15714	21862	19167	20608	17725
P_1	14493	22736	22411	19880	21175	18585
Mean	17209	19225	22136	19523	20892	18155
K_1	18693	21381	22602			
K_2	15725	17069	21672			

S.E. of P or K marginal mean = 1261 lb./ac.
S.E. of N marginal mean = 1545 lb./ac.
S.E. of body of N×P or N×K table = 2185 lb./ac.
S.E. of body of P×K table = 1784 lb./ac.
S E. of control mean = 3090 lb./ac.

Crop :- Cabbage ***(Rabi).*** **Ref :- Bh. 57(221).**

Site :- Agri. Res. Instt., Pusa. **Type :- 'M'.**

Object :—To study the effect of N, P and K on Cabbage.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Bottle gourd. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 21.10.1957/9.12.1957. (iv) (a) 2 ploughings by *desi* plough. (b) Line planting. (c) 6 oz./ac. (d) 2′×2′. (e) 1. (v) 10 C.L./ac. of F.Y.M. (vi) Florida Header. (vii) Irrigated. (viii) 2 earthings. (ix) 6.29″. (x) 13.1.1958 to 19.2.1958.

2. TREATMENTS .

Same as in expt. no. 56(227) on page 578.

3. DESIGN :

(i) R.B.D. (ii) (a) 13. (b) N.A. (iii) 4. (iv) (a) 10′×9′. (b) 8′×8′. (v) 1′×½′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of cabbage. (iv) (a) 1956—1959. (b) No. (c) Nil. (v) (a) Sabour. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 24070 lb./ac. (ii) 5710 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of cabbage in lb./ac.

Control = 19174 lb./ac.

	N_1	N_2	N_3	Mean	K_1	K_2
P_0	25032	21874	22042	22983	20996	24969
P_1	23688	27171	27059	25973	24208	27738
Mean	24360	24523	24550	24478	22602	26354
K_1	20888	24483	22434			
K_2	27832	24562	26667			

S.E. of P or K marginal mean = 1166 lb./ac.

S.E. of N marginal mean = 1428 lb./ac.

S.E. of body of N×P or N×K table = 2019 lb./ac.

S.E. of body of P×K table = 1648 lb./ac.

S.E. of control mean = 2855 lb./ac.

Crop :- Cabbage ***(Rabi).*** **Ref :- Bh. 58(245).**

Site :- Agri. Res. Instt., Pusa. **Type :- 'M'.**

Object :—To study the effect of N, P and K on Cabbage.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 4.10.1958/15.11.1958. (iv) (a) 2 ploughings by *desi* plough. (b) Line planting. (c) 6 oz./ac. (d) 2′×2′. (e) 1. (v) 10 C.L./ac. of F.Y.M. (vi) Florida Header. (vii) Irrigated. (viii) 2 earthings. (ix) 4.76″. (x) 19.1.1959 to 16.2.1959.

2. TREATMENTS :

All combinations of (1), (2) and (3)+a control (no manure).

(1) 3 levels of N as A/S : $N_1=80$, $N_2=100$ and $N_3=120$ lb./ac.
(2) 2 levels of P_2O_5 as Super : $P_0=0$ and $P_1=60$ lb./ac.
(3) 2 levels of K_2O as Mur. Pot. : $K_1=60$ and $K_2=80$ lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 13. (b) N.A. (iii) 2. (iv) (a) 10′×9′. (b) 8′×8′. (v) 12″×6″. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of cabbage. (iv) (a) 1956—1959. (b) No. (c) Nil. (v) (a) Sabour. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 14022 lb./ac. (ii) 5835 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of cabbage in lb./ac.

Control = 18435 lb./ac.

	N_1	N_2	N_3	Mean	K_1	K_2
P_0	11648	11659	15198	12835	12290	13380
P_1	12410	11446	19566	14474	14231	14717
Mean	12029	11552	17382	13654	13260	14048
K_1	9755	12017	18010			
K_2	14302	11088	16755			

S.E. of P or K marginal mean = 1684 lb./ac.
S.E. of N marginal mean = 2063 lb./ac.
S.E. of body of N×P or N×K table = 2918 lb./ac.
S.E. of body of P×K table = 2382 lb./ac.
S.E. of control mean = 4126 lb./ac.

Crop :- Cabbage. **Ref :- Bh. 59(169).**
Site :- Agri. Res. Instt., Pusa. **Type :- 'M'.**

Object :—To study the effect of N, P and K on Cabbage.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 29.9.1959/23.10.1959. (iv) (a) 2 ploughings by *desi* plough. (b) Line planting. (c) 6 oz./ac (d) 2′×2′. (e) 1. (v) 10 C.L./ac. of F.Y.M. (vi) Florida Header. (vii) Irrigated. (viii) 2 weedings and 1 earthing. (ix) 5.25″. (x) 10.3.1956 to 8.4.1956.

2. TREATMENTS :

Same as in expt. no. 56(227) on page 578.

3. DESIGN :

(iii) R.B.D. (ii) (a) 13. (b) N.A. (iii) 4. (iv) (a) 10′×10′. (b) 8′×8′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Yield of cabbage. (iv) (a) 1956—1959. (b) No. (c) Nil. (v) (a) Sabour. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 26773 lb./ac. (ii) 6946 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of cabbage in lb./ac.

Control = 15187 lb./ac.

	N_1	N_2	N_3	Mean	K_1	K_2
P_0	28795	25189	26723	26902	27536	26268
P_1	26566	28336	30822	28575	29158	27993
Mean	27680	26762	28772	27738	28347	27130
K_1	28168	29882	28829			
K_2	27194	23643	30554			

S.E. of P or K marginal mean = 1418 lb./ac.
S.E. of N marginal mean = 1736 lb./ac.
S.E. of body of N×K or N×P table = 2455 lb./ac.
S.E. of body of P×K table = 2005 lb./ac.
S.E. of control mean = 3473 lb./ac.

Crop :- Cabbage *(Rabi)*. **Ref :- Bh. 55(256).**
Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To study the effect of N, P and K on Cabbage.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 14.11.1955. (iv) (a) 3 ploughings. (b) Transplanting. (c) 6 oz./ac. (d) 2′×2′. (e) 1. (v) Nil. (vi) Florida Header. (vii) Irrigated. (viii) 2 weedings and earthing. (ix) 0.79″. (x) 20.1.1956 to 25.2.1956.

2. TREATMENTS :

Same as in expt. no. 56(227) on page 578.

3. DESIGN :

(i) R.B.D. (ii) (a) 13. (b) N.A. (iii) 4. (iv) (a) 12′×8′. (b) 10′×6′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Cabbage yield. (iv) (a) 1955—1957. (b) No. (c) Nil. (v) (a) and (b) Pusa. (vi) and (vii) Nil.

5. RESULTS :

(i) 28178 lb./ac. (ii) 4410 lb./ac. (iii) None of of the effects is significant. (iv) Av. yield of cabbage in lb./ac.

Control = 19599 lb./ac.

	N_1	N_2	N_3	Mean	K_1	K_2
P_0	27025	27671	28494	27730	27706	27753
P_1	30711	30020	29436	30056	30701	29410
Mean	28868	28846	28965	28893	29204	28582
K_1	29329	27864	30419			
K_2	28407	29827	27511			

S.E. of P or K marginal mean = 900 lb./ac.
S.E. of N marginal mean = 1102 lb./ac.
S.E. of body of N×K or N×P table = 1558 lb./ac.
S.E. of body of P×K table = 1273 lb./ac.
S.E. of control mean = 2205 lb./ac.

Crop :- Cabbage *(Rabi)*. **Ref :- Bh. 56(252).**
Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To study the effect of N, P and K on Cabbage.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 19.11.1956. (iv) (a) 3 ploughings. (b) Transplanting. (c) 6 oz./ac. (d) 4′×2′. (e) 1. (v) Nil. (vi) Florida Header. (vii) Irrigated. (viii) 2 weedings and earthing. (ix) 5.20″. (x) 15.1.1957 to 20.2.1957.

2. TREATMENTS :

Same as in expt. no. 56(227) on page 578.

3. DESIGN :

(i) R.B.D. (ii) (a) 13. (b) N.A. (iii) 4. (iv) (a) 10′×10′. (b) 8′×8′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Cabbage yield. (iv) (a) 1955—1957. (b) No. (c) Nil. (v) (a) Pusa. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 27039 lb./ac. (ii) 3539 lb./ac. (iii) Control *vs.* others, main effects of N and interactions N×P and N×K are highly significant. Effect of P and interaction P×K are significant. (iv) Av. yield of Cabbage in lb./ac.

Control = 16844 lb./ac.

	N_1	N_2	N_3	Mean	K_1	K_2
P_0	24348	27767	27672	26596	27090	26102
P_1	26135	30171	31240	29182	28934	29430
Mean	25242	28969	29456	27889	28012	27766
K_1	25757	29229	29049			
K_2	24726	28709	29863			

S.E. of P or K marginal mean = 722 lb./ac.
S.E. of N marginal mean = 885 lb./ac.
S.E. of body of N×K or N×P table = 1252 lb./ac.
S.E. of body of P×K table = 1021 lb./ac.
S.E. of control mean = 1770 lb./ac.

Crop :- Cabbage *(Rabi)*. **Ref :- Bh. 57(257).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To study the effect of N, P and K on Cabbage.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 9.10.1957. (iv) (a) 2 ploughings. (b) Transplanting. (c) 6 oz./ac. (d) 2′×2′. (e) 1. (v) Nil. (vi) Florida Header. (vii) Irrigated. (viii) Earthing up twice. (ix) 0.19″. (x) 10.1.1958 to 15.2.1958.

2. TREATMENTS :

All combinations of (1), (2) and (3)+a control (no manure)

(1) 3 levels of N as A/S : $N_1=80$, $N_2=100$ and $N_3=120$ lb./ac.
(2) 2 levels of P_2O_5 as Super : $P_0=0$ and $P_1=60$ lb./ac.
(3) 2 levels of K_2O as Mur. Pot. : $K_1=60$ and $K_2=80$ lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 13. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 8′×8′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Cabbage yield. (iv) (a) 1955—1957. (b) No. (c) Nil. (v) (a) Pusa. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 39327 lb./ac. (ii) 5070 lb./ac. (iii) Control *vs.* others and interactions N×P and P×K are highly significant. Main effects of P and N are significant. (iv) Av. yield of cabbage in lb./ac.

Control = 28449 lb./ac.

	N_1	N_2	N_3	Mean	K_1	K_2
P_0	35468	41885	38625	38659	37832	39487
P_1	40439	41836	33145	41807	43563	40051
Mean	37954	41860	40885	40233	40697	39769
K_1	38302	42135	41655			
K_2	37605	41586	40115			

S.E. of P or K marginal mean = 1035 lb./ac.
S.E. of N marginal mean = 1268 lb./ac.
S.E. of body of N×K or N×P table = 1793 lb./ac.
S.E. of body of P×K table = 1464 lb./ac.
S.E. of control mean = 2535 lb./ac.

Crop :- Cauliflower *(Rabi)*. **Ref :- Bh. 56(192).**

Site :- Agri. Res. Instt., Pusa. **Type :- 'M'.**

Object :—To study the effect of N, P and K on Cauliflower.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) G.M. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 17.8.1956/28.10.1956. (iv) (a) 2 ploughings by *desi* plough. (b) Line sowing on ridges. (c) 4 oz./ac. (d) 2′×2′. (e) 1. (v) G.M. (vi) Sabour—55. (vii) Irrigated. (viii) 2 weedings and 2 earthings. (ix) 26.0″. (x) 2 to 25.1.1957.

2. TREATMENTS :

All combinations of (1), (2) and (3)+a control (no manure).

(1) 2 levels of N as A/S : $N_1=40$ and $N_2=80$ lb./ac.
(2) 3 levels of P_2O_5 as Super : $P_1=40$, $P_2=80$ and $P_3=100$ lb./ac.
(3) 2 levels of K_2O as Mur. Pot. : $K_1=40$ and $K_2=80$ lb./ac.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 13. (b) N.A. (iii) 4. (iv) (a) 11′×10′. (b) 8′×8′. (v) 1½′×1′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Cauliflower yield. (iv) (a) 1956—1959. (b) No. (c) Nil. (v) (a) Sabour. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 6232 lb./ac. (ii) 2013 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of cauliflower in lb./ac.

Control = 366∞lb./ac.

	P_1	P_2	P_3	Mean	K_1	K_2
N_1	5156	6254	5717	5709	5824	5594
N_2	6771	7195	7581	7183	6937	7428
Mean	5964	6725	6649	6446	6381	6511
K_1	5771	6668	6703			
K_2	6156	6781	6595			

S.E. of N or K marginal mean = 411 lb./ac.
S.E. of P marginal mean = 503 lb./ac.
S.E. of body of N×P or P×K table = 711 lb./ac.
S.E. of body of N×K table = 581 lb./ac.
S.E. of control mean = 1007 lb./ac.

Crop :- Cauliflower ***(Rabi).*** **Ref :- Bh. 57(198).**

Site :- Agri. Res. Instt., Pusa. **Type :- 'M'.**

Object :—To study the effect of N, P and K on Cauliflower.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Lady—finger. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) N.A. (iv) (a) 2 ploughings by *desi* plough. (b) Line sowing on ridges. (c) 4 oz./ac. (d) 2'×2'. (e) 1. (v) Nil. (vi) Sabour—55. (vii) Irrigated. (viii) 2 weedings and 2 earthings. (ix) N.A. (x) 12 to 28.1.1958.

2. TREATMENTS :

All combinations of (1), (2) and (3)+a control (no manure).
(1) 2 levels of N as A/S : $N_1=80$ and $N_2=100$ lb./ac.
(2) 3 levels of P_2O_5 as Super : $P_1=60$, $P_2=80$ and $P_3=100$ lb./ac.
(3) 2 levels of K_2O as Mur. Pot. : $K_1=60$ and $K_2=80$ lb./ac.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 13. (b) N.A. (iii) 4. (iv) (a) 10'×9'. (b) 8'×8'. (v) 1'×½'. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Cauliflower yield. (iv) (a) 1956—1959. (b) No. (c) Nil. (v) (a) Sabour. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 4865 lb./ac. (ii) 1768 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of cauliflower in lb./ac.

Control = 2712 lb./ac.

	P_1	P_2	P_3	Mean	K_1	K_2
N_1	4702	5581	5142	5142	5125	5158
N_2	5639	4478	4722	4946	3954	5938
Mean	5171	5030	4932	5044	4540	5548
K_1	4780	4859	3981			
K_2	5561	5200	5883			

S.E. of N or K marginal mean = 360.9 lb./ac.
S.E. of P marginal mean = 442.0 lb./ac.
S.E. of body of N×P or P×K table = 625.1 lb./ac.
S.E. of body of N×K table = 510.4 lb./ac.
S.E. of control mean = 884 lb./ac.

Crop :- Cauliflower ***(Rabi).*** **Ref :- Bh. 58(196).**

Site :- Agri. Res. Instt., Pusa. **Type :- 'M'.**

Object :—To study the effect of N, P and K on Cauliflower.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) N.A. (iv) (a) 2 ploughings by *desi* plough. (b) Line planting on ridges. (c) 4 oz./ac. (d) 2′×2′. (e) 1. (v) Nil. (vi) Sabour—55. (vii) Irrigated. (viii) 1 weeding and 2 earthings. (ix) N.A. (x) 3 to 28.1.1959.

2. TREATMENTS :

Same as in expt. no. 57(198) on page 584.

3. DESIGN :

(i) R.B.D. (ii) (a) 13. (b) N.A. (iii) 4. (iv) (a) 11′×10′, (b) 8′×8′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of cauliflower. (iv) (a) 1956—1959. (b) No. (c) Nil. (v) (a) Sabour. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 11410 lb./ac. (ii) 2264 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of cauliflower in lb./ac.

Control = 8234 lb./ac.

	P_1	P_2	P_3	Mean	K_1	K_2
N_1	11951	10634	12634	11740	11492	11987
N_2	10839	11727	12263	11610	11720	11499
Mean	11395	11181	12449	11675	11606	11743
K_1	11170	10966	12683			
K_2	11619	11395	12214			

S.E. of control mean = 1132 lb./ac.
S.E. of N or K marginal mean = 462.1 lb./ac.
S.E. of P marginal mean = 566.0 lb./ac.
S.E. of body of N×P or P×K table = 800.4 lb./ac.
S.E. of body of N×K table = 653.5 lb./ac.

Crop :- Cauliflower *(Rabi)*. **Ref :- Bh. 59(129).**
Site :- Agri. Res. Instt., Pusa. **Type :- 'M'.**

Object :—To study the effect of N, P and K on Cauliflower.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 4.11.1959. (iv) (a) N.A. (b) Planting on ridges. (c) 4 oz./ac. (d) 2′×2′. (e) 1. (v) to (vii) N.A. (viii) Weeding and earthing. (ix) 1.0″. (x) 13.1.1960 to 8.2.1960.

2. TREATMENTS :

Same as in expt. no. 57(198) on page 584.

3. DESIGN :

(i) R.B.D. (ii) (a) 13. (b) N.A. (iii) 4. (iv) (a) 10′×10′. (b) 8′×8′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Yield of cauliflower. (iv) (a) 1956—1959. (b) No. (c) Nil. (v) (a) Sabour. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 13222 lb./ac. (ii) 3677 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of cauliflower in lb./ac.

Control = 8790 lb./ac.

	P_1	P_2	P_3	Mean	K_1	K_2
N_1	11805	13532	12849	12729	12904	12553
N_2	14390	13561	15405	14452	14718	14185
Mean	13098	13547	14127	13591	13811	13369
K_1	12829	14741	13863			
K_2	13366	12351	14390			

S.E. of N or K marginal mean = 751 lb./ac.
S.E. of P marginal mean = 919 lb./ac.
S.E. of body of N×P or P×K table = 1300 lb./ac.
S.E. of body of N×K table = 1061 lb./ac.
S.E. of control mean = 1839 lb /ac.

Crop :- Cauliflower *(Rabi)*. **Ref :- Bh. 55(253).**

Site :- Agri Res. Instt., Sabour. **Type :- 'M'.**

Object :—To study the effect of N, P and K on Cauliflower.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 15.11.1955. (iv) (a) 3 ploughings. (b) Transplanting. (c) 4 oz./ac. (d) 2'×2'. (e) 1. (v) Nil. (vi) Snowball. (vii) Irrigated. (viii) 2 weedings and earthing up. (ix) 0.75". (x) 21.1.1956 to 23.2.1956.

2. TREATMENTS :

All combinations of (1), (2) and (3)+a control (no manure).

(1) 2 levels of N as A/S : N_1=40 and N_2=80 lb./ac.
(2) 3 levsls of P_2O_5 : P_1=40, P_2=80 and P_3=100 lb./ac.
(3) 2 levels of K_2O : K_1=40 and K_2=80 lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 13. (b) N.A. (iii) 4. (iv) (a) 10'×10'. (b) 8'×8'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Yield of Cauliflower. (iv) (a) 1955—1957. (b) No. (c) Nil. (v) (a) Pusa. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 12264 lb./ac. (ii) 1925 lb./ac. (iii) Control *vs.* others and interaction N×P are highly significant. (iv) Av. yield of Cauliflower in lb./ac.

Control = 5784 lb./ac.

	P_1	P_2	P_3	Mean	K_1	K_2
N_1	12766	13955	11968	12896	12224	13568
N_2	12943	11083	14107	12711	12775	12646
Mean	12855	12519	13038	12804	12500	13107
K_1	12202	12289	13009			
K_2	13507	12749	13066			

S.E. of N or K marginal mean = 392.9 lb./ac.
S.E. of P margnal mean = 481.2 lb./ac.
S.E. of body of N×P or P×K table = 680.5 lb./ac.
S.E. of body of N×K table = 555.6 lb./ac.
S.E. of control mean = 962.5 lb./ac.

Crop :- Cauliflower *(Rabi)*. **Ref :- Bh. 56(249).**
Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To study the effect of N, P and K on Cauliflower.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 20.11.1956. (iv) (a) 3 ploughings. (b) Transplanting. (c) 4 oz./ac. (d) 2′×2′. (e) 1. (v) Nil. (vi) Snowball. (vii) Irrigated. (viii) 2 weedings and earthing up. (ix) 7·26″. (x) 20.1.1957 to 25.2.1958.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 55(253) on page 586.

5. RESULTS :

(i) 6420 lb./ac. (ii) 1416 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of Cauliflower in lb./ac.

Control = 5390 lb./ac.

	P_1	P_2	P_3	K_1	K_2	Mean
N_1	6796	6051	6595	6291	6670	6481
N_2	6340	6891	6360	6205	6856	6530
Mean	6568	6471	6478	6248	6763	6506
K_1	6320	5959	6466			
K_2	6817	6983	6490			

S.E. of N or K marginal mean = 289.0 lb./ac.
S.E. of P marginal mean = 354.0 lb./ac.
S.E. of body of N×P or P×K table = 500.6 lb./ac.
S.E. of body of N×K table = 408.7 lb./ac.
S.E. of control mean = 708 lb./ac.

Crop :- Cauliflower *(Rabi)*. **Ref :- Bh. 57(254).**
Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To study the effect of N, P and K on Cauliflower.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 5.10.1957. (iv) (a) 3 ploughings. (b) Transplanting. (c) 4 oz./ac. (d) 2′×2′. (e) 1. (v) Nil. (vi) Snowball. (vii) Irrigated. (viii) 2 weedings and earthing up. (ix) 0.19″. (x) 15.1.1958 to 18.2.1958.

2. TREATMENTS :

All combinations of (1), (2) and (3)+a control (no manure).
(1) 2 levels of N as A/S : $N_1=80$ and $N_2=100$ lb./ac.
(2) 3 levels of P_2O_5 as Super : $P_1=60$, $P_2=80$ and $P_3=100$ lb./ac.
(3) 2 levels of K_2O as Mur. Pot. : $K_1=60$ and $K_2=80$ lb./ac.

3. DESIGN and 4. GENERAL :

Same as in expt no. 55(253) on page 586.

5. RESULTS :

(i) 22249 lb./ac. (ii) 4975 lb./ac. (iii) Control *vs.* others, effect N and interaction N×K are highly significant. Interaction N×P is significant. (iv) Av. yield of cauliflower in lb./ac.

Control = 10624 lb./ac.

	P_1	P_2	P_3	Mean	K_1	K_2
N_1	20796	21657	20282	20912	20472	21350
N_2	27360	23239	25975	25525	24241	26809
Mean	24078	22448	23129	23218	22357	24080
K_1	23021	22535	21514			
K_2	25135	22361	24743			

S.E. of N or K marginal mean = 1016 lb./ac.
S.E. of P marginal mean = 1244 lb./ac.
S.E. of body of N×P or P× K table = 1759 lb./ac.
S.E. of body of N×K table = 1437 lb./ac.
S.E. of control mean = 2488 lb./ac.

Crop :- Tomato *(Rabi)*. **Ref :- Bh. 56(224).**

Site :- Agri. Res. Instt., Pusa. **Type :- 'M'.**

Object :—To study the effect of N, P and K on Tomato.

1. BASAL CONDITIONS .

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 8.8.1956/23.9.1956. (iv) (a) 2 ploughings by *desi* plough. (b) Planting in lines. (c) 3 oz./ac. (d) 3′ between rows and 2′ between plants. (e) 1. (v) Nil. (vi) Marglobe (early). (vii) Irrigated. (viii) 4 weedings by *khurpi*. (ix) 12.7″. (x) 13.1.1957 to 23.3.1957.

2. TREATMENTS :

All combinations of (1), (2) and (3)+a control (no manure).
(1) 2 levels of N as A/S : N_1=40 and N_2=80 lb./ac.
(2) 3 levels of P_2O_5 as Super : P_1=40, P_2=80 and P_3=100 lb./ac.
(3) 2 levels of K_2O as Mur. Pot. : K_1=40 and K_2=80 lb./ac.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 13. (b) N.A. (iii) 4. (iv) (a) 9′×7′. (b) 8′×5′. (v) $1' \times \frac{1}{2}'$. (vi) Yes.

4. GENERAL :

(i) Good (ii) No. (iii) Yield of Tomato. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) (a) Sabour. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 36848 lb./ac. (ii) 10420 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of Tomato in lb./ac.

Control = 32458 lb./ac.

	P_1	P_2	P_3	Mean	K_1	K_2
N_1	33566	35885	33242	34231	34839	33622
N_2	38763	42762	39066	40197	41686	38707
Mean	36165	39323	36154	37214	38263	36164
K_1	38909	40354	35526			
K_2	33421	38293	36781			

S.E. of N or K marginal mean = 2127 lb./ac.
S.E. of P marginal mean = 2605 lb./ac.
S.E. of body of N×P or P×K table = 3684 lb./ac.
S.E. of body of N×K table = 3008 lb /ac.
S.E. of control mean = 5210 lb./ac.

Crop :- Tomato *(Rabi)***.** **Ref :- Bh. 57(218).**

Site :- Agri. Res. Instt., Pusa. **Type :- 'M'.**

Object :—To study the effect of N, P and K on Tomato.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Sponge gourd. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 17.8.1957/30.9.1957. (iv) (a) 2 ploughings by *desi* plough. (b) Planted in lines. (c) 3 oz./ac. (d) 3′×2′. (e) 1. (v) Nil. (vi) Marglobe (early). (vii) Irrigated. (viii) 3 weedings by *khurpi*. (ix) 11.95″. (x) 16.1.1958 to 5.5.1958.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 56(224) on page 588.

5. RESULTS :

(i) 15734 lb./ac. (ii) 4128 lb./ac. (iii) Interactions P×K and N×K are significant. No other effect is significant. (iv) Av. yield of tomato in lb./ac.

Control = 19040 lb./ac.

	P_1	P_2	P_3	Mean	K_1	K_2
N_1	13630	15781	13104	14172	13223	15120
N_2	13597	18771	17864	16744	15568	17920
Mean	13614	17276	15484	15458	14396	16520
K_1	14067	15266	13854			
K_2	13160	19286	17114			

S.E. of N or K marginal mean = 843 lb./ac.
S.E. of P marginal mean = 1032 lb./ac.
S.E. of body of N×K or P×K table = 1459 lb./ac.
S.E. of body of P×K table = 1192 lb./ac.
S.E. of control mean = 2064 lb./ac.

Crop :- Tomato *(Rabi)*. **Ref :- Bh. 58(242).**

Site :- Agri. Res. Instt., Pusa. **Type :- 'M'.**

Object :—To study the effect of N, P and K on Tomato.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) N.A. (iv) (a) 2 ploughings by *desi* plough. (b) Planted in lines. (c) 3 oz /ac. (d) 3′×2′. (e) 1. (v) Nil. (vi) Marglobe (early). (vii) Irrigated. (viii) 4 weedings by *khurpi*. (ix) N.A. (x) 27.12.1958 to 10.3.1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 56(224) on page 588.

5. RESULTS :

(i) 812.2 lb./ac. (ii) 247.3 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of tomato in lb./ac.

Control = 671.2 lb./ac.

	P_1	P_2	P_3	Mean	K_1	K_2
N_1	699.5	841.4	855.5	798.8	781.5	816.1
N_2	727.9	869.7	950.1	849.2	768.8	929.6
Mean	713.7	855.6	902.8	824.0	775.2	872.9
K_1	652.3	836.6	836.6			
K_2	775.2	874.4	968.9			

S.E. of N or K marginal mean = 50.5 lb./ac.'
S.E. of P marginal mean = 61.8 lb./ac.
S.E. of body of N×P or P×K table = 87.4 lb./ac.
S.E. of body of P×K table = 71.4 lb. ac.
S.E. of control mean = 123.7 lb./ac.

Crop :- Tomato *(Rabi)*. **Ref :- Bh. 55(254).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To study the effect of N, P and K on Tomato.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 25.9.1955. (iv) (a) 3 ploughings. (b) Transplanting. (c) 3 oz./ac. (d) 3′×2′. (e) 1. (v) Nil. (vi) Marglobe. (vii) Irrigated. (viii) 2 weedings. (ix) 1.63″. (x) 20.1.1956 to 19.4.1956.

2. TREATMENTS :

All combinations of (1), (2) and (3)+a control (no manure).
(1) 2 levels of N as A/S : $N_1=40$ and $N_2=80$ lb./ac.
(2) 3 levels of P_2O_5 as Super : $P_1=40$, $P_2=80$ and $P_3=100$ lb./ac.
(3) 2 levels of K_2O as Mur. Pot. : $K_1=40$ and $K_2=80$ lb./ac.

3 DESIGN :

(i) R.B.D. (ii) (a) 13. (b) N.A. (iii) 4. (iv) (a) 14′×8′. (b) 12′×6′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Tomato yield. (iv) (a) 1955—1957. (b) No. (c) Nil. (v) (a) Pusa. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 15699 lb./ac. (ii) 4140 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of tomato in lb./ac.

Control = 12490 lb./ac.

	P_1	P_2	P_3	Mean	K_1	K_2
N_1	16424	16732	14551	15902	16275	15529
N_2	14107	15477	18505	16030	16212	15848
Mean	15266	16105	16528	15966	16244	15689
K_1	15399	17250	16082			
K_2	15132	14959	16975			

S.E. of N or K marginal mean = 845 lb./ac.
S.E. of P marginal mean = 1035 lb./ac.
S.E. of body of N×P or P×K table = 1464 lb./ac.
S.E. of body of N×K table = 1195 lb./ac.
S.E. of control mean = 2070 lb./ac.

Crop :- Tomato *(Rabi)*. **Ref :- Bh. 56(250).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To study the effect of N, P and K on Tomato.

1. BASAL CONDITIONS :

(i) (a) to (c) N A. (ii) (a) Sandy loam. (b) N.A. (iii) 29 10.1956. (iv) (a) 3 ploughings. (b) Transplanting. (c) 3 oz./ac. (d) 2½′×2½′, (e) 1. (v) Nil. (vi) Marglobe. (vii) Irrigated. (viii) 3 weedings. (ix) 7.26″. (x) 25.1.1957 to 15.4.1958.

2, TREATMENTS :

Same as in expt. no. 55(254) on page 590.

3. DESIGN :

(i) R.B D. (ii) (a) 13. (b) N.A. (iii) 4. (iv) (a) 14½′×7′. (b) 12½′×5′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Tomato yield. (iv) (a) 1955—1957. (b) No. (c) Nil. (v) (a) Pusa. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 14452 lb./ac. (ii) 2586 lb./ac. (iii) Control *vs.* others and interaction P×K are highly significant ; interactions N×P and N×K are significant. (iv) Av. yield of tomato in lb./ac.

Control = 10900 lb./ac.

	P_1	P_2	P_3	Mean	K_1	K_2
N_1	13319	14225	15351	14298	15544	10352
N_2	16017	13633	15943	15198	15099	15296
Mean	14668	13929	15647	14748	15322	13052
K_1	14577	14204	17184			
K_2	14758	13654	14110			

S.E. of N or K marginal mean = 527.9 lb./ac.
S.E. of P marginal mean = 646.5 lb./ac.
S.E. of body of N×P or P×K table = 914.3 lb./ac.
S.E. of body of N×K table. = 746.6 lb./ac.
S E of control mean = 1293 lb./ac.

Crop :- Tomato *(Rabi).* **Ref :- Bh. 57(255).**

Site : Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To study the effect of N, P and K on Tomato.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 22.9.1957. (iv) (a) 2 ploughings. (b) Transplanting. (c) 3 oz./ac. (d) 3′×2′. (e) 1. (v) Nil. (vi) Marglobe. (vii) Irrigated. (viii) 3 weedings by *khurpi*. (ix) 0.19″. (x) 15.1.1958 to 20.4.1958.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 55(254) on page 590.

5. RESULTS :

(i) 16325 lb./ac. (ii) 5330 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of tomato in lb./ac.

Control = 15500 lb./ac.

	P_1	P_2	P_3	Mean	K_1	K_2
N_1	19055	18422	13059	16845	16656	17035
N_2	13607	16517	17705	15943	14869	15225
Mean	16331	17470	15382	16394	15762	17026
K_1	15010	16737	15540			
K_2	17651	16517	17705			

S.E. of N or K marginal mean = 1088 lb./ac.
S.E. of P marginal mean = 1332 lb./ac.
S.E. of body of N×P or P×K table = 1884 lb./ac.
S.E. of body of N×K table = 1539 lb./ac.
S.E. of control mean = 2665 lb./ac.

Crop :- Onion *(Rabi).* **Ref :- Bh. 58(179).**

Site :- Govt. Agri. Farm, Nawadah. **Type :- 'M'.**

Object : –To study the effect of N, P and K on Onion.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Loam. (b) N.A. (iii) 23, 25, 26.1.1959. (iv) (a) 5 ploughings. (b) Transplanting. (c) 2½ lb./ac. (d) 1′ between rows. (e) —. (v) Nil. (vi) Local. (vii) Irrigated. (viii) 1 weeding. (ix) 0.33″. (x) 17 to 19.5.1959.

2. TREATMENTS:

9 manurial treatments : M_0=Control (no manure), M_1=75 lb./ac. of N as C/N, M_2=75 lb./ac. of N as A/S., M_3=150 lb./ac. of N as C/N, M_4=150 lb./ac. of N as A/S, M_5=150 lb./ac. of N as C/N+80 lb./ac. of P_2O_5 as Super, M_6=150 lb./ac. of N as A/S+80 lb./ac. of P_2O_5 as Super., M_7=150 lb./ac. of N as C/N+80 lb./ac. of P_2O_5 as Super+80 lb./ac. of K_2O as Mur. Pot. and M_8=150 lb./ac. of N as A/S+80 lb./ac. of P_2O_5 as Super+80 lb./ac. of K_2O as Mur. Pot.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 44′×12′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Onion yield. (iv) (a) to (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 6326 lb./ac. (ii) 613.0 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of onion in lb./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8
Av. yield	3394	4752	4964	7424	6194	7594	7467	7976	7170

S.E./mean = 306.5 lb./ac.

Crop :- Onion ***(Rabi).*** **Ref :- Bh. 56(225).**

Site :- Agri. Res. Instt., Pusa. **Type :- 'M'.**

Object :—To study the effect of N, P and K on Onion.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Bottle gourd. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 12.11.1956/23.1.1957. (iv) (a) 3 ploughings by *desi* plough. (b) Planting in line. (c) 4 lb./ac. (d) 6″×6″. (e) 1. (v) Nil. (vi) Local. (vii) Irrigated. (viii) 2 weedings by hand. (ix) 6.24″. (x) 25.5.1957.

2. TREATMENTS :

13 treatments : $T_0=0$, $T_1=n_1$, $T_2=n_2$, $T_3=n_3$, $T_4=n_1+k_1$, $T_5=n_2+k_1$, $T_6=n_3+k_1$, $T_7=n_1+k_2$, $T_8=n_2+k_2$, $T_9=n_3+k_2$, $T_{10}=n_1+k_1+p_1$, $T_{11}=n_2+k_2+p_2$ and $T_{12}=n_3+k_2+p_2$ where $n_1=40$ lb./ac. of N as A/S, $n_2=80$ lb./ac. of N as A/S, $n_3=100$ lb./ac. of N as A/S, $p_1=40$ lb./ac. of P_2O_5 as Super, $p_2=80$ lb./ac. of P_2O_5 as Super, $k_1=40$ lb./ac. of k_2O as Mur. Pot. and $k_2=80$ lb./ac. of K_2O as Mur. Pot.

3. DESIGN :

(i) R.B.D. (ii) (a) 13. (b) N.A. (iii) 6. (iv) (a) 8′×6′. (b) 6′×4′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Onion yield. (iv) (a) 1956—1959. (b) No. (c) Nil. (v) (a) Sabour. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 5533 lb./ac. (ii) 999 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of onion in lb./ac.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8	T_9	T_{10}	T_{11}	T_{12}
Av. yield	5040	5152	4906	5578	5018	5443	6294	5555	5242	6474	5376	6048	5802

S E./mean = 407.8 lb./ac.

Crop :-Onion. **Ref :- Bh. 57(219).**

Site :- Agri. Res. Instt., Pusa. **Type :- 'M'.**

Object :—To study the effect of N, P and K on Onion.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Bottle gourd. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 5.11.1957/31.12.1957. (iv) (a) 3 ploughings by *desi* plough. (b) Line planting. (c) 4 lb./ac. (d) 6″×6″. (e) 1. (v) Nil. (vi) Local. (vii) Irrigated. (viii) 2 earthings and 2 weedings. (ix) 6.28″. (x) 18.5.1958.

2. TREATMENTS :

Same as in expt. no. 56(225) above.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 13. (b) N.A. (iii) 5. (iv) (a) 8′×6′. (b) 6′×4′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of onion. (iv) (a) 1956—1959. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 13767 lb./ac. (ii) 2466 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of onion in lb./ac.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8	T_9	T_{10}	T_{11}	T_{12}
Av. yield	11290	14426	12925	13843	12701	14246	12522	13888	13485	13261	15568	16800	14022

S.E./mean = 1103 lb./ac.

Crop :- Onion *(Rabi)*.
Site :- Agri. Res. Instt., Pusa.

Ref :- Bh. 58(243).
Type :- 'M'.

Object :—To study the effect of N, P and K on Onion.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 16.11.1958/7.1.1959. (iv) (a) 3 ploughings by *desi* plough. (b) Line planting. (c) 4 lb./ac. (d) 6″×6″. (e) 1. (v) Nil. (vi) Local. (vii) Irrigated. (viii) 2 weedings by *khurpi.* (ix) 4.4″. (x) 20.5.1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 56(225) on page 593.

5. RESULTS :

(i) 7701 lb./ac. (ii) 1035 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of onion in lb./ac.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8	T_9	T_{10}	T_{11}	T_{12}
Av. yield	5757	6362	6362	6854	7078	7997	8714	7616	8266	8288	7706	9386	9722

S.E./mean = 422.5 lb./ac.

Crop :- Onion *(Rabi)*.
Site :- Agri. Res. Instt., Pusa.

Ref :- Bh. 59(167).
Type :- 'M'.

Object :—To study the effect of N, P and K on Onion.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 10.11.1956/17.2.1960. (iv) (a) (a) 3 ploughings by *desi* plough. (b) Line planting. (c) 4 lb./ac. (d) 6″×6″. (e) 1. (v) Nil. (vi) Local. (vii) Irrigated. (viii) 2 weedings by *khurpi.* (ix) 5.25″. (x) 20.5.1960 to 26.5.1960.

2. TREATMENTS :

Same as in expt. no. 56(225) on page 593.

3. DESIGN :

(i) R.B.D. (ii) (a) 13. (b) N.A. (iii) 5. (iv) (a) 8′×6′. (b) 6′×4′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield of onion. (iv) (a) 1956—1959. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 8572 lb./ac. (ii) 1586 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of onion in lb./ac.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8	T_9	T_{10}	T_{11}	T_{12}
Av. yield	8355	7907	7907	9251	8221	9677	9072	8803	8266	7571	9072	8982	8355

S.E./mean = 709.3 lb./ac.

Crop :- Onion *(Rabi)*. **Ref :- Bh. 55(255).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To study the effect of N, P and K on Onion.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 10.12.1955. (iv) (a) 2 ploughings. (b) Transplanting. (c) 4 lb./ac. (d) 6″×6″. (e) 1. (v) Nil. (vi) Local. (vii) Irrigated. (viii) 2 weedings. (ix) 0.79″. (x) 20.4.1956.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 56(225) on page 593.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of onion. (iv) (a) 1955—1957. (b) No. (c) Nil. (v) (a) Pusa. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 10425 lb./ac. (ii) 1955 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of onion in lb./ac.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8	T_9	T_{10}	T_{11}	T_{12}
Av. yield	6673	10573	10474	10647	11050	10153	12194	10227	10474	12087	10976	10096	9898

S.E./mean = 798.1 lb./ac.

Crop :- Onion *(Rabi)*. **Ref :- Bh. 56(251).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To study the effect of N, P and K on Onion.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 5.12.1956./2.1.1957. (iv) (a) 2 ploughings. (b) Transplanting. (c) 4 lb./ac. (d) 6″×6″. (e) 1. (v) Nil. (vi) Local. (vii) Irrigated. (viii) 2 weedings. (ix) 5.43″. (x) 15.4.1957.

2. TREATMENTS :

Same as in expt no. 56(225) on page 593.

3. DESIGN :

(i) R.B.D. (ii) (a) 13. (b) N.A. (iii) 5. (iv) (a) 8′×6′. (b) 6′×4′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of onion. (iv) (a) 1955—1957. (b) No. (c) Nil. (v) (a) Pusa. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 12734 lb./ac. (ii) 3312 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of onion in lb.ca.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8	T_9	T_{10}	T_{11}	T_{12}
Av. yield	10614	11519	14728	13741	13823	11684	11355	11437	14399	14317	10779	14728	12424

S.E./mean = 1481 lb./ac.

Crop :- Onion *(Rabi).* **Ref :- Bh. 57(256).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To study the effect of N, P and K on Onion.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) N.A./17.12.1957. (iv) (a) 3 ploughings. (b) Transplanting. (c) 4 lb./ac. (d) 6″×6″. (e) 1. (v) Nil. (vi) Local. (vii) Irrigated. (viii) 2 weedings and earthing up. (ix) 0.35″. (x) 25 4.1958.

2. TREATMENTS :

Same as in expt. no. 56(225) on page 593.

3. DESIGN :

(i) R.B.D. (ii) (a) 13. (b) N.A. (iii) 6. (iv) (a) 8′×6′. (b) 6′×4′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of onion. (iv) (a) 1955—1957. (b) No. (c) Nil. (v) (a) Pusa. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 24451 lb./ac. (ii) 4884 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of onion in lb./ac.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8	T_9	T_{10}	T_{11}	T_{12}
Av. yield	18809	23878	26437	22495	24717	24799	24717	24569	24338	24569	26264	26181	26181

S.E./mean = 1994 lb./ac.

Crop :- Soyabean *(Kharif).* **Ref :- Bh. 58, 59(11).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'M'.**

Object :—To study the effect of N, P, K and lime on Soyabean.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Red laterite. (b) Refer soil analysis, Kanke. (iii) 3rd week of June. (iv) (a) 4 ploughings by *desi* plough. (b) Line sowing. (c) N.A. (d) 1′ between rows. (e) N.A. (v) N.A. (vi) Local. (vii) Unirrigated. (viii) Hoeing and weeding. (ix) and (x) N.A.

2. TREATMENTS :

1. Control (no manure).
2. 3600 lb./ac. of lime.
3. 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super+40 lb./ac. of K_2O as Mur. Pot.
4. Treatment 3+3600 lb./ac. of lime.

Lime applied only in 1958. Residual effect of lime studied in subsequent years.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) 14′×20′. (b) 12′×18′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Nil. (iis) Bean yield. (iv) (a) 1958—1960. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

1958

(i) 578 lb./ac. (ii) 104.5 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of bean in lb./ac.

Treatment	1	2	3	4
Av. yield	142	1275	271	625

S.E./mean = 46.7 lb./ac.

(i) 421 lb./ac. (ii) 114.6 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of bean in lb./ac.

Treatment	1	2	3	4
Av. yield	142	247	329	967

S.E./mean = 51.2 lb./ac.

Crop :- Soyabean *(Kharif)*. **Ref :- Bh. 56(212).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To see the effect of seed inoculation with root nodules bacteria with and without phosphate and Molybdenum on Soyabean.

BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 28.7.1956. (iv) (a) 3 spadings. (b) Line sowing. (c) 10 srs./ac. (d) 1′ between rows. (e) N.A. (v) N.A. (vi) Local. (vii) Unirrigated. (viii) Nil. (ix) 40.6″. (x) 28.11.1956.

2. TREATMENTS :

T_1=Control.
T_2=Seed inoculation.
T_3=40 lb./ac. of P_2O_5 as Super.
$T_4=T_2+T_3$.
T_5=2 lb./ac. of Molybdenum as Ammonium Molybdate.
$T_6=T_2+T_5$.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 14′×11′. (b) 12′×9′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1956—N.A. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 261.8 lb./ac. (ii) 102.4 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of soyabean in lb./ac.

Treatment	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	182	143	519	363	246	117

S.E./mean 51.2 lb./ac.

Crop :- Soyabean *(Kharif)*. **Ref :- Bh. 57(204).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :— To see the effect of seed inoculation with root nodules bacteria with and without phosphate and Molybdenum on Soyabean.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Khesari* and *Masoor*. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 25.7.1957. (iv) 2 spadings. (b) Line sowing. (c) 10 srs./ac. (d) 1½′ beween rows. (e) N.A. (v) Nil. (vi) Local. (vii) Unirrigated. (viii) 1 hoeing. (ix) 13.9″. (x) 23.11.1957.

2. TREATMENTS :

Same as in expt. no. 56(212) above.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 3. (iv) (a) 14′×11′. (b) 12′×9′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1956—N.A. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 621 lb./ac. (ii) 120.0 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of soyabean in lb./ac.

Treatment	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	355	570	622	864	484	829

S.E./mean = 69.3 lb./ac.

Crop :- Soyabean *(Kharif)*. **Ref :- Bh. 58(221).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To see the effect of seed inoculation with root nodule bacteria with and without phosphate and Molybdenum on Soyabean.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Khesari*. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 15.7.1958. (iv) (a) 3 spadings. (b) Line sowing. (c) 2 oz./plot. (d) 1′ between rows. (e) —. (v) Nil. (vi) Local. (vii) Irrigated. (viii) 2 weedings by *khurpi*. (ix) 28.1″. (x) 30.11.1958.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 57(204) on page 597.

5. RESULTS :

(i) 681 lb./ac. (ii) 262.5 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of soyabean in lb./ac.

Treatment	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	691	570	968	523	864	467

S.E./mean = 151.6 lb./ac.

Crop :- Gram *(Rabi)*. **Ref :- Bh. 56(84).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'M'.**

Object :—To find out best method of applying fertilizers to Gram.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Kanke. (iii) 3.11.1955. (iv) (a) 2 ploughings followed by beaming. (b) Behind the plough. (c) 35 srs./ac. (d) Rows 1′ apart. (e) 2 to 3. (v) Nil. (vi) ST—4 (medium). (vii) Unirrigated. (viii) Nil. (ix) 18.57″. (x) 23.3.1956.

2. TREATMENTS :

3 methods of application of about 103 lb./ac. of Super : M_0=No Super, M_1=In urrows and M_2=Broadcast on the surface.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) 120′×54′. (iii) 4. (iv) (a) 42′×54′. (b) 40′×50′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Grain yield per plot. (iv) (a) to (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 496 lb./ac. (ii) 83.1 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2
Av. yield	433	533	522

S.E./mean = 41.5 lb./ac.

Crop :- Gram *(Rabi)*. **Ref :- Bh. 58(114).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'M'.**

Object :—To find out the effect of placement of lime on the yield of Gram.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Red laterite. (b) Refer soil analysis, Kanke. (iii) 28.10.1958. (iv) (a) 1 general ploughing and a spading. (b) Line sowing. (c) 25 srs./ac. (d) Row to row 1′. (e) N.A. (v) Nil. (v) ST—4. (vii) Irrigated. (viii) 1 hoeing. (ix) and (x) N.A.

2. TREATMENTS

All combinations of (1) and (2)

(1) 2 levels of fertilizers : M_0=Control and M_1=40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super+40 lb./ac. of K_2O as Mur. Pot.

(2) 3 levels of lime : L_0=No lime, L_1=3600 lb./ac. applied on the surface one month before sowing and L_2=1800 lb./ac. applied 6″ below the surface+1800 lb./ac. applied on the surface, one month before sowing.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 6. (b) N.A. (iii) 5. (iv) (a) N.A. (b) 12′×9′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) 1958—1960. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 835 lb./ac. (ii) 714.4 lb./ac. (iii) Main effect of M is highly significant and that of L is significant. L×M interaction is not significant. (iv) Av. yield of grain in lb./ac.

	L_0	L_1	L_2	Mean
M_0	181	428	666	425
M_1	485	1563	1687	1245
Mean	333	996	1177	835

S.E. of M marginal mean = 184.5 lb./ac.
S.E. of L marginal mean = 225.9 lb./ac.
S.E. of body of table = 319.5 lb./ac.

Crop :- Gram *(Rabi)*. **Ref :- Bh. 59(54).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'M'.**

Object :—To find out the effect of placement of lime on the yield of Gram.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) As per treatments. (ii) (a) Red laterite. (b) Refer soil analysis, Kanke. (iii) N.A. (iv) (a) Digging of plots twice by spade. (b) Line sowing. (c) 25 srs./ac. (d) Row to row 1′. (e) N.A. (v) Nil. (vi) ST—4. (vii) Irrigated. (viii) 1 hoeing. (ix) and (x) N.A.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(114) on page 599.

5. RESULTS :

(i) 852 lb./ac. (ii) 181.7 lb./ac. (iii) Main effects of L and M are highly significant. (iv) Av. yield of grain in lb./ac.

	L_0	L_1	L_2	Mean
M_0	319	1029	802	717
M_1	514	1265	1183	987
Mean	416	1147	992	852

S.E. of M marginal mean = 46.9 lb./ac.
S.E. of L marginal mean = 57.5 lb./ac.
S.E. of body of table = 81.3 lb./ac.

Crop :- Gram *(Rabi)*. **Ref :- Bh. 58, 59(8).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'M'.**

Object :—To study the effect of N, P, K and lime on Gram.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Red laterite. (b) Refer soil analysis, Kanke. (iii) Last week of Oct. (iv) (a) 4 ploughings with *desi* plough. (b) Line sowing. (c) N.A. (d) 1′ between rows. (e) N.A. (v) N.A. (vi) ST—4. (vii) Irrigated. (viii) Hoeing and weeding. (ix) N.A. (x) Last week of March.

2. TREATMENTS :

1. Control (no manure).
2. 3600 lb./ac. of lime.
3. 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super+40 lb./ac. of K_2O as Mur. Pot.
4. Treatment 3+3600 lb./ac. of lime.

Lime applied in 1958 only. Residual effect of lime studied in subsequent years.

3. DESIGN:

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) 14′×20′. (b) 12′×18′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Nil. (iii) Grain yield. (iv) (a) 1958—1960. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

1958

(i) 404 8 lb./ac. (ii) 97.9 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4
Av. yield	160	244	365	850

S.E./mean = 43.8 lb./ac.

1959

(i) 510 6 lb./ac. (ii) 204.8 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4
Av. yield	154	525	407	957

S.E./mean = 91.6 lb./ac.

Crop :- Gram. **Ref :- Bh. 56(43).**

Site :- Govt. Agri. Farm, Musheri. **Type :- 'M'.**

Object :—To test the effect of placement of Super on the yield of Gram.

1. BASAL CONDITIONS :

(i) (a) No. (b) Paddy. (c) 6 ton/ac. of T.C +2½ md./ac. of A/S and Super each. (ii) (a) Sandy loam. (b) N.A. (iii) 30.11.1956. (iv) (a) Tractor and Bihar ploughing. (b) Sowing behind the plough. (c) 60 lb./ac. (d) and (e) —. (v) Nil. (vi) BR—17. (vii) Unirrigated. (viii) 1 weeding. (ix) 3.58". (x) 21.4.1957.

2. TREATMENTS :

3 methods of application of 40 lb./ac. of P_2O_5 as Super : M_0=control (no manure) M_1=at surface and M_2=at plough depth.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) 252'×87'. (iii) 6. (iv) (a) 42'×29'. (b) 40'×27'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Bad—lodged on 10.1.1957. (ii) Nil. (iii) Yield of grain. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) (a) Nawadah, Sabour and Kanke. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 439 lb./ac. (ii) 125.9 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	P_0	P_1	P_2
Av. yield	453	411	453

S.E./mean = 51.4 lb./ac.

Crop :- Gram ***(Rabi)*.** **Ref :- Bh. 57(21)**

Site :- Govt. Agri. Farm, Musheri. **Type :- 'M'.**

Object :—To test the effect of placement of Super on the yield of Gram.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Jowar*. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 21.11.1957. (iv) (a) 3 ploughings. (b) Behind the plough. (c) 60 lb./ac. (d) Rows 1' apart. (e) —. (v) Nil. (vi) BR—17 (medium). (vii) Unirrigated. (viii) Hoeing and weeding once. (ix) 1.45". (x) 15.4.1958.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 56(43) above.

4. GENERAL :

(i) Poor. (ii) Nil. (iii) Grain yield. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 334 lb./ac. (ii) 11.3 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	P_0	P_1	P_2
Av. yeild	351	345	305

S.E./mean = 4.6 lb./ac.

Crop :- Gram. *(Rabi)*. **Ref :- Bh. 58(13).**
Site :- Govt. Agri. Farm, Musheri. **Type :- 'M'.**

Object :—To test the effect of placement of Super on the yield of Gram.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Jowar*. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 4.11.1958/—. (iv) (a) 3 ploughings. (b) Sown behind the plough. (c) 60 lb./ac. (d) Rows 1′ apart. (e) —. (v) Nil. (vi) BR—17 (medium). (vii) Unirrigated. (viii) Hoeing and weeding once. (ix) 4.80″. (x) 15.4.1959.

2. TREATMENTS :

Same as in expt. no. 56(43) on page 601.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) N.A. (b) 40′×27′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain yield. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 381 lb./ac. (ii) 89.3 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2
Av. yield	425	309	408

S.E./mean = 36.5 lb./ac.

Crop :- Gram. **Ref :- Bh. 56(45).**
Site :- Govt. Agri. Farm, Musheri. **Type :- 'M'.**

Object :—To test the effect of Potash on the yield of Gram.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 15 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super at puddling time and 15 lb./ac. of N as A/S after two weeks of transplanting. (ii) (a) Sandy loam. (b) N.A. (iii) 23.12.1956. (iv) (a) Ploughing with tractor and Bihar plough. (b) Sowing behind the plough. (c) 60 lb./ac. (d) and (e) N.A. (v) Nil. (vi) BR—65. (vii) Unirrigated. (viii) Weeding once. (ix) 3.05″. (x) 25.4.1957.

2. TREATMENTS :

All combination of (1) and (2).
(1) 2 levels of P_2O_5 as Super : $P_0=0$ and $P_1=40$ lb./ac.
(2) 2 levels of K_2O as Mur. Pot. : $K_0=0$ and $K_1=40$ lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 3. (iv) (a) 56′×22′. (b) 54′×20′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Bad. (ii) Nil. (iii) Grain yield. (iv) (a) 1956—1957. (b) and (c) No. (v) (a) Sabour and Patna. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 122 lb./ac. (ii) 31.3 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	Mean
K_0	103	125	114
K_1	100	161	130
Mean	101	143	122

S.E. of any marginal mean = 12.8 lb./ac.
S.E. of body of the table = 18.0 lb./ac.

Crop :- Gram *(Rabi)*. **Ref :- Bh. 57(20).**

Site :- Govt. Agri. Farm, Musheri. **Type :- 'M'.**

Object :—To test the effect of Potash on the yield of Gram.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Maize. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 17.11.1957. (iv) (a) 3 ploughings. (b) Behind the plough. (c) 60 lb./ac. (d) Rows 1′ apart. (e) —. (v) Nil. (vi) BR—65 (medium). (vii) Unirrigated. (viii) Hoeing and weeding once. (ix) 1.59″. (x) 22.4.1958.

2. TREATMENTS :

Same as in expt. no. 56(45) on page 602.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) 280′×88′. (iii) 5. (iv) (a) 56′×22′. (b) 54′×20′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Very poor. (ii) Nil. (iii) Grain yield. (iv) (a) 1956—1957. (b) No. (c) Nil. (v) (a) Sepaya. (b) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 141 lb./ac. (ii) 72.2 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	Mean
K_0	160	111	136
K_1	161	131	146
Mean	161	121	141

S.E. of any marginal mean = 22.8 lb./ac.
S.E. of body of the table = 32.3 lb./ac.

Crop :- Gram. **Ref :- Bh. 55(144).**

Site :- Govt. Agri. Farm, Nawadah. **Type :- 'M'.**

Object :—To test the effect of deep placement of Super on the yield of Gram.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) G.M. crop. (c) Nil. (ii) (a) Loam. (b) N.A. (iii) 9.12.1955. (iv) (a) 5 or 6 *desi* ploughings. (b) Sown behind the plough. (c) 30 sr./ac. (d) Between rows 1′. (e) —. (v) Nil.. (vi) ST—4. (vii) Unirrigated. (viii) Nil. (ix) 1.62″. (x) 24.3.1956.

2. TREATMENTS :

Same as in expt. no. 56(43) on page 601.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 4. (iv) (a) 33′×33′. (b) 31′×32′. (v) 12″×6″. (vi) Yes.

4. GENERAL :

(i) Moderate. (ii) Nil. (iii) Date of flowering, yield of grain and straw. (iv) (a) 1955—1959. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 184 lb./ac. (ii) 87.4 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2
Av. yield	186	166	201

S.E./mean = 43.7 lb./ac.

Crop :- Gram *(Rabi).* **Ref :- Bh. 56(154).**

Site :- Govt. Agri. Farm, Nawadah. **Type :- 'M'.**

Object :—To test the effect of placement of Super on the yield of Gram.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Gram. (c) 40 lb./ac. of P_2O_5 as super. (ii) (a) and (b) N.A. (iii) 2.12.1956. (iv) (a) 3 ploughings by country plough. (b) Behind the plough. (c) 80 lb./ac. (d) Rows 10″ apart. (e) —. (v) Nil. (vi) ST—4 (late) (vii) Unirrigated. (viii) Nil. (ix) 2.21″. (x) 28.3.1957.

2. TREATMENTS :

Same as in expt. no. 56(43) on page 601.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 4. (iv) (a) and (b) 33′×33′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) 1955—1959. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 330.0 lb./ac. (ii) 64.28″ lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2
Av. yield	250	330	410

S.E./mean = 32.1 lb./ac.

Crop :- Gram *(Rabi).* **Ref :- Bh. 57(187).**

Site :- Govt. Agri. Farm, Nawadah. **Type :- 'M'.**

Object :—To test the effect of placement of Super on Gram.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 40 lb./ac. of N as A/S+40 lb./ac. of P as Super. (ii) (a) Loam. (b) N.A. (iii) 22.12.1957. (iv) (a) 3 ploughings. (b) Behind the plough. (c) 100 lb./ac. (d) Between rows 1′. (e) —. (v) Nil. (vi) ST—4. (vii) Unirrigated. (viii) Nil. (ix) 0.54″. (x) 2.4.1958.

2. TREATMENTS :

Same as in expt. no. 56(43) on page 601.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 4. (iv) (a) and (b) 33′×33′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) 1955—1959. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 91 lb./ac. (ii) 16.9 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2
Av. yield	56	103	115

S.E./mean = 8.5 lb./ac.

Crop :- Gram *(Rabi).* **Ref :- Bh. 58(169).**

Site :- Govt. Agri. Farm, Nawadah. **Type :- 'M'.**

Object :—To test the effect of placement of Super on the yield of Gram.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Loam. (b) N.A. (iii) 15.11.1958. (iv) (a) 4 ploughings. (b) Behind the plough. (c) 30 sr./ac. (d) Rows 1′ apart. (e) —. (v) Nil. (vi) ST—4. (vii) Unirrigated. (viii) 2 weedings and hoeings. (ix) 0.03″. (x) 30.3.1959.

2. TREATMENTS :

Same as in expt. no. 55(144) on page 603.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 5. (iv) (a) N.A. (b) 36′×30′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) 5% B.H.C. dusted against Agrotis. (iii) Grain yield. (iv) (a) 1955—1959. (b) No. (c) Nil. (v) (a) Pipra and Sabour. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 919 lb./ac. (ii) 100.4 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2
Av. yield	764	863	1130

S.E./mean = 44.9 lb./ac.

Crop :- Gram *(Rabi)*. **Ref :- Bh. 59(99).**

Site :- Govt. Agri. Farm., Nawadah. **Type :- 'M'.**

Object :—To test the effect of placement of Super on the yield of Gram.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Loam. (b) N.A. (iii) 10.11.1959. (iv) (a) 4 ploughings. (b) Behind the plough. (c) 30 sr./ac. (d) Rows 1′ apart. (e) —. (v) Nil. (vi) ST—4. (vii) Unirrigated. (viii) Nil. (ix) 1.16″. (x) 17.3.1960.

2. TREATMENTS ;

Same as in expt. no. 55(144) on page 603.

3. DESIGN :

(i) R B.D. (ii) (a) 3. (b) N.A. (iii) 5. (iv) (a) N.A. (b) 36′×30′. (v) N.A. (iv) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) 1955—1959. (b) No. (c) Nil. (v) (a) Pipra and Sabour. (b) N A. (vi) and (vii) Nil.

5. RESULTS :

(i) 452 lb./ac. (ii) 50.5 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2
Av. yield	383	443	531

S.E./mean = 22.6 lb./ac.

Crop :- Gram. **Ref :- Bh. 55(123).**

Site :- Agri. Res. Instt., Patna. **Type :- 'M'.**

Object :—To test the effect of deep placement of Super on the yield of Gram.

1. BASAL CONDITIONS :

(i) (a) Paddy—Gram. (b) Paddy. (c) 1 md./ac. of A/S+1 md./ac. of Super. (ii) (a) Clay. (b) Refer soil analysis, Patna. (iii) 25.11.1955. (iv) (a) Land prepared by *desi* plough. (b) Sowing by *tara* seed drill. (c) 40 srs./ac. (d) Between rows 1′. (e) N.A. (v) Nil. (vi) 54 (late). (vii) Unirrigated. (viii) Nil. (ix) 1.36″. (x) 2/3.4.1956.

2. TREATMENTS :

Same as in expt. no. 55(144) on page 603.

3. DESIGN :

(i) R B.D. (ii) (a) 3. (b) N.A. (iii) 4. (iv) (a) and (b) 60.5′×18′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Height and grain yield. (iv) (a) to (c) No. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1449 lb./ac. (ii) 498.5 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2
Av. yield	1509	1454	1383

S.E./mean = 249.2 lb./ac.

Crop :- Gram. **Ref :- Bh. 56(63).**

Site :- Agri. Res. Instt., Patna. **Type :- 'M'.**

Object :—To test the effect of potash on crop yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Heavy soil. (b) Refer soil analysis, Patna. (iii) 13.11.1956. (iv) (a) 3 ploughings. (b) Behind the plough. (c) 20 srs./ac. (d) Lines 1′ apart. (e) —. (v) Nil. (vi) ST—4. (vii) Unirrigated. (viii) N.A. (ix) 4.29″. (x) 20, 21.3.1957.

2. TREATMENTS :

4 manurial treatments : M_0=Control, M_1=40 lb./ac. of P_2O_5 as Super, M_2=40 lb./ac. of K_2O as Mur. Pot. and $M_3=M_1+M_2$.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) 43′.4″×28′. (b) 40′.4″×27′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 388 lb./ac. (ii) 95.7 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3
Av. yield	428	397	356	373

S.E./mean = 42.8 lb./ac.

Crop :- Gram ***(Rabi).*** **Ref :- Bh. 57(37).**

Site :- Agri. Res. Instt., Patna. **Type :- 'M'.**

Object :—To test the effect of potash on crop yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Jowar.* (c) N.A. (ii) (a) Heavy clay. (b) Refer soil analysis, Patna. (iii) 12.11.1958. (iv) (a) 3 ploughings. (b) Behind the plough. (c) 20 srs./ac. (d) 1′×6″. (e) —. (v) Nil. (vi) ST.—4. (vii) Unirrigated. (viii) Weeding. (ix) 1.16″. (x) 15, 16.3.1958.

2. TREATMENTS :

Same as in expt. no. 56(63) on page 606.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) N.A. (b) 30¼′×30¼′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) No lodging. (ii) Nil. (iii) Straw and grain yield. (iv) (a) 1955—1958. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULT

(i) 943 lb./ac. (ii) 123.4 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3
Av. yield	871	917	935	1048

S.E./mean = 55.19 lb./ac.

Crop :- Gram. **Ref :- Bh. 58(150).**
Site :- Agri. Res. Instt., Patna. **Type :- "M".**

Object :—To test the effect of potash on crop yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Heavy clay. (b) Refer soil analysis, Patna. (iii) 4.12.1958. (iv) (a) 2 ploughings. (b) Behind the plough. (c) 25 srs./ac. (d) Rows 1′ apart. (e) —. (v) Nil. (vi) ST.—4. (vii) Unirrigated. (viii) Nil. (ix) 2.95″. (x) 29.3.1959.

2. TREATMENTS :

Same as in expt. no. 56(63) on page 606.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) 34′×28′. (b) 32′×26′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) 1956—1958. (b) and (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 844 lb./ac. (ii) 72.6 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3
Av. yield	762	843	898	872

S.E./mean = 32.5 lb./ac.

Crop :- Gram. **Ref :- Bh. 56(62).**
Site :- Agri. Res. Isntt., Patna. **Type :- 'M'.**

Object :—To test the effect of trace elements on crop yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Heavy soil. (b) N.A. (iii) 15, 16, 17.11.1956. (iv) (a) 2 ploughings. (b) Behind the plough. (c) 20 srs./ac. (d) Between rows 1′. (e) —. (v) Nil. (vi) ST.—4. (vii) Unirrigated. (viii) Nil. (ix) 4.29″. (x) 22.3.1957.

2. TREATMENTS :

14 treatments : T_0=Control, T_1=40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as super+40 lb./ac. of K_2O as Mur. Pot., $T_2=T_1+10$ lb./ac. of $MnSO_4$, $T_3=T_1+20$ lb./ac. of $MnSO_4$, $T_4=T_1+10$ lb./ac. of $ZnSO_4$, $T_5=T_1+20$ lb./ac. of $ZnSO_4$, $T_6=T_1+10$ lb./ac. of Borax, $T_7=T_1+20$ lb./ac. of Borax, $T_8=T_1+10$ lb./ac. of $CuSO_4$, $T_9=T_1+20$ lb./ac. of $CuSO_4$, $T_{10}=T_1+10$ lb./ac. of $FeSO_4$, $T_{11}=T_1+20$ lb./ac. of $FeSO_4$, $T_{12}=T_1+10$ lb./ac. of Cobalt sulphate and $T_{13}=T_1+$ 20 lb./ac. of Cobalt sulphate.

3. DESIGN :

(i) R.B.D. (ii) (a) 14. (b) N.A. (iii) 5. (iv) (a) N.A. (b) 30′3″×18′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 584 lb./ac. (ii) 60.7 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	568	574	569	576	629	568	623

Treatment	T_7	T_8	T_9	T_{10}	T_{11}	T_{12}	T_{13}
Av. yield	563	579	612	602	601	576	535

S.E./mean = 27.1 lb./ac.

Crop :- Gram *(Rabi).* **Ref :- Bh. 57(36).**

Site :- Agri. Res. Instt., Patna. **Type :- 'M'.**

Object :—To test the effect of trace elements on crop yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Jowar.* (c) N.A. (ii) (a) Heavy clay. (b) Refer soil analysis, Patna. (iii) 11.11.1957. (iv) (a) 3 ploughings. (b) Behind the plough. (c) 20 srs./ac. (d) 1′×6″. (e) —. (v) Nil. (vi) ST.—4. (vii) Unirrigated. (viii) Weeding. (ix) 1.16″. (x) 20.3.1958.

2. TREATMENTS :

Same as in expt. no. 56(62) on page 607 with 1 lb. and 2 lb./ac. of Molybdenum in place of 10 lb. and 20 lb./ac. of cobalt sulphate respectively.

3. DESIGN :

(i) R.B.D. (ii) (a) 14. (b) N.A. (iii) 5. (iv) (a) 32′×21′. (b) 29½′×19½′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) No lodging. (ii) Nil. (iii) Grain yield. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1021 lb./ac. (ii) 220.5 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	1004	944	1011	979	944	1056	1070

Treatment	T_7	T_8	T_9	T_{10}	T_{11}	T_{12}	T_{13}
Av. yield	1011	992	1083	1000	1118	1000	1087

S.E./mean = 98.6 lb./ac.

Crop :- Gram *(Rabi)*. **Ref :- Bh. 58(146).**

Site :- Agri. Res. Instt., Patna. Type :- 'M'.

Object :—To test the effect of trace elements on crop yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Heavy clay. (b) Refer soil analysis, Patna. (iii) 16 to 18.12.1958. (iv) (a) 2 ploughings. (b) Behind plough. (c) 25 srs./ac. (d) Rows 1′ apart. (e) —. (v) Nil. (vi) ST—4. (vii) Unirrigated. (viii) Nil. (ix) 2.98″. (x) 5 to 7.4.1959.

2. TREATMENTS :

Same as in expt. no. 56(62) on page 607 with 1 lb, and 2 lb /ac. of Molybdenum in the place of 10 lb. and 20 lb./ac. of Cobalt sulphate respectively.

3. DESIGN :

(i) R.B.D. (ii) (a) 14. (b) N.A. (iii) 5. (iv) (a) 22′×24′. (b) 20′3″×23′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) 1956—1958. (b) and (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 683 lb./ac. (ii) 194.9 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	631	692	636	767	879	739	645

Treatment	T_7	T_8	T_9	T_{10}	T_{11}	T_{12}	T_{13}
Av. yield	561	748	519	715	748	645	641

S.E./mean = 87.2 lb./ac.

Crop :- Gram *(Rabi)*. **Ref :- Bh. 59(44).**

Site :- Govt. Agri. Farm, Piprakothi. Type :- 'M'.

Object :—To test the effect of deep placement of Super on crop yield.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) *Sanai* G.M. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 26.11.1959. (iv) (a) Ploughing once by *desi* plough, once by Bihar plough and beaming. (b) Behind the plough. (c) 30 srs./ac. (d) Row to row 1′. (e) 2 to 3. (v) Nil. (vi) Local (late). (vii) Irrigated. (viii) Harrowing once by peg harrow and weeding twice by *khurpi*. (ix) N.A. (x) 15.4.1960.

2. TREATMENTS :

3 methods of application of 40 lb./ac. of P_2O_5 as Super : M_0=Control (no manure), M_1=On the surface and M_2=at plough depth.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) 105′×103′. (iii) 6. (iv) (a) 35′×35′. (b) 33′×33′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) Severe attack of Agrotis (Borers) in pods. (iii) No. of tillers per plant, gram yield. (iv) (a) 1959—N.A. (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 115 lb./ac. (ii) 40.1 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2
Av. yield	106	111	129

S.E./mean = 16.4 lb /ac.

Crop :- Gram *(Rabi).* **Ref :- Bh. 56(204).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To find out the effect of different types of phosphates on the yield of Gram.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Kalai.* (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 25.11.1956. (iv) (a) 3 spadings. (b) Line sowing. (c) 35 lb./ac. (d) Row to row 1′. (e) N.A. (v) N.A. (vi) BR—68. (vii) Irrigated. (viii) 2 weedings. (ix) 6.16″. (x) 19.4.1957.

2. TREATMENTS :

6 sources of P_2O_5 at 40 lb./ac. : S_0=Control (no manure), S_1=Super, S_2=Rock Phos. S_3=Dicalcium Phos. S_4=Hyper phos. and S_5=B.M.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 14′×11′. (b) 12′×9′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) Heavy rains at flowering. (vii) Nil.

5. RESULTS :

(i) 2090 lb./ac. (ii) 227.6 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	S_0	S_1	S_2	S_3	S_4	S_5
Av. yield	1841	2347	2178	2100	1971	2100

S.E./mean = 113.8 lb./ac.

Crop :- Gram *(Rabi).* **Ref :- Bh. 57(208)**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To find the effect of different types of phosphate on the yield of Gram.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Kalai.* (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 21.10.1957. (iv) (a) 3 spandings one at time of sowing. (b) Line sowing. (c) 30 srs./ac. (d) Rows 1′ apart. (e) 1. (v) Nil. (vii) B—77. (vii) Irrigated. (viii) 1 *khurpi* operation and 1 hand hoe operation. (ix) 0.06″. (x) 11.3.1958.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 56(204) above.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Grain yield. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2010 lb./ac. (ii) 234.5 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb /ac.

Treatment	S_0	S_1	S_2	S_3	S_4	S_5
Av. yield	1977	2242	2178	1860	1841	1964

S.E./mean = 117.3 lb./ac.

Crop :- Gram *(Rabi).* **Ref :- Bh 58(239).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To find out the effect of different types of phosphate on the yield of Gram.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Maize. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 28.10.1958. (iv) (a) 4 spadings. (b) Broadcast. (c) 30 srs./ac. (d) and (e) Nil. (v) Nil. (vi) ST—4. (vii) Irrigated. (viii) 1 weeding by *khurpi*. (ix) 4.03". (x) 29.3.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 56(204) on page 610

4. GENERAL :

(i) N.A. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1956—1958. (b) and (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 1737 lb./ac. (ii) 247.4 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	S_0	S_1	S_2	S_3	S_4	S_5
Av. yield	1880	1296	1789	1867	1724	1867

S.E./mean = 123.7 lb./ac.

Crop :- Gram *(Rabi).* **Ref :- Bh. 58(232).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To find out the effect of different types of phosphate on the yield of Gram.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Dhaincha.* (c) Nil. (ii) (a) Sandy loam, (b) N.A. (iii) 2.12.1958. (iv) (a) 4 ploughings. by *desi* plough. (b) Line sowing. (c) 30 srs./ac. (d) Rows 1½' apart. (e) 1. (v) Nil. (vi) ST—4 (late). (vii) Irrigated. (viii) 1 weeding by hand hoe. (ix) 3.70". (x) 8.4.1959.

2. TREATMENTS :

5 sources of P_2O_5 at 40 lb./ac. : S_0=Control (no manure), S_1=Super, S_2=B.M., S_3=Rock phos. and S_4= Di-cal. phos.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) 37'×33'. (b) 35'×31'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) Nil. (iii) Grain and straw yield. (iv) (a) to (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 1330 lb./ac. (ii) 260.8 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	S_0	S_1	S_2	S_3	S_4
Av. yield	1471	1476	1163	1258	1284

S.E./mean = 92.2 lb./ac.

Crop :- Gram *(Rabi).* **Ref :- Bh. 59(158).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To find out the effect of different types of phosphate on the yield of Gram.

1. BALAL CONDITIONS :

(i) (a) Nil. (b) *Jowar.* (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 18.11.1959. (iv) (a) 4 ploughings by *desi* plough. (b) Line sowing. (c) 30 srs./ac. (d) Rows 1½' apart. (e) N.A. (v) Nil. (vi) ST—4. (vii) Irrigated. (viii) 1 weeding by *khurpi* and 1 operation by hand hoe. (ix) 1.60". (x) 2.4.1960.

2. TREATMENTS :

Same as in expt. no. 58(232) on page 611.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 32′×20′. (b) 30′×18′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Grain and straw yield. (iv) (a) to (c) N.A. (v) to (vii) Nil.

5. RESULTS:

(i) 640 lb./ac. (ii) 130.8 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	S_0	S_1	S_2	S_3	S_4
Av. yield	601	605	606	739	649

S.E./mean = 65.4 lb./ac.

Crop :- Gram ***(Rabi)*****.** **Ref :- 59(159).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To find out the effect of different kinds of phosphates on crop yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Maize. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 5.11.1959. (iv) (a) 4 spadings. (b) Line sowing. (c) 30 srs./ac. (d) Rows 1½′ apart. (e) N.A. (v) Nil. (vi) ST—4 (late). (vii) Irrigated. (viii) 1 weeding by *khurpi*. (ix) 1.60″. (x) 16.3.1960.

2. TREATMENTS :

5 sources of P_2O_5 at 40 lb./ac. : S_0=control (no manure), S_1=super, S_2=Rock phos. S_3=Basic slag and S_4=B.M.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 14′×11′. (b) 12′×9′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Grain yield. (iv) (a) to (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 2030 lb./ac. (ii) 740.5 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	S_0	S_1	S_2	S_3	S_4
Av. yield	1711	1932	2100	2385	2022

S.E./mean = 370.3 lb./ac.

Crop :- Gram ***(Rabi)*****.** **Ref :- Bh. 56(205).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To test the effect of trace elements on crop yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Jowar.* (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 25.11.1956. (iv) (a) 3 spadings. (b) Line sowing. (c) 35 lb./ac. (d) Row to row 1′. (e) N.A. (v) Nil. (vi) BR—68. (vii) Irrigated. (viii) 2 weedings. (ix) 6.16″. (x) 24.4.1957.

2. TREATMENTS :

14 trace element treatments : T_0=Control, T_1=40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as super+40 lb./ac. of K_2O as Mur. Pot. $T_2=T_1+10$ lb./ac. of $MnSO_4$, $T_3=T_1+20$ lb./ac. $MnSO_4$, $T_4=T_1+10$ lb./ac. of $ZnSO_4$, $T_5=T_1+20$ lb./ac. of $ZnSO_4$, $T_6=T_1+10$ lb./ac. of Borax, $T_7=T_1+20$ lb./ac. of Borax, $T_8=T_1+10$ lb./ac. of $CuSO_4$, $T_9=T_1+20$ lb./ac. of $CuSO_4$, $T_{10}=T_1+10$ lb./ac. of $FeSO_4$, $T_{11}=T_1+20$ lb./ac. of $FeSO_4$, $T_{12}=T_1+1$ lb./ac. of Molybdenum and $T_{13}=T_1+2$ lb./ac. of Molybdenum.

3. DESIGN :

(i) R.B.D. (ii) (a) 14. (b) N.A. (iii) 4. (iv) (a) 14′×11′. (b) 12′×9′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) Heavy rains at flowering. (vii) Expt. failed in 1957 and 1958.

5. RESULTS :

(i) 2441 lb./ac. (ii) 325.0 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield. of grain in lb./ac.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	2606	2437	2282	2567	2489	2203	2463

Treatment	T_7	T_8	T_9	T_{10}	T_{11}	T_{12}	T_{13}
Av. yield	2606	2450	2541	2230	2268	2567	2463

S.E./mean = 162.5 lb./ac.

Crop :- Gram *(Rabi)*. **Ref :- Bh. 58(235).**
Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To test the effect of potash on the yield of Gram.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Jowar*. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 24.11.1958. (iv) (a) 1 tractor ploughing, 2 ploughings by *desi* plough. (b) Line sowing. (c) 30 srs./ac. (d) Rows 1½′ apart. (e) N.A. (v) Nil. (vi) ST—4 (late). (vii) Irrigated. (viii) 1 weeding by hand hoe. (ix) 3.15″. (x) 10.4.1959.

2. TREATMENTS :

4 manurial treatments : M_0=Control (no manure), M_1=40 lb./ac. of P_2O_5 as Super, M_2=40 lb./ac. of K_2O as Mur. Pot. and $M_3=M_1+M_2$.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) 48′×26′. (b) 46′×24′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Grain and straw yield. (iv) (a) to (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 284 lb./ac. (ii) 54.3 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3
Av. yield	278	296	271	292

S.E./mean = 24.3 lb./ac.

Crop :- Gram *(Rabi)*. **Ref :- Bh. 58(234).**
Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To test the effect of placement of Super on the crop yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Maize. (c) F.Y.M. at 200 mds./ac. (ii) (a) Sandy loam. (b) N.A. (iii) 20.11.1958./— (iv) (a) 1 tractor ploughing and 1 cross ploughing by *desi* plough. (b) Line sowing. (c) 40 srs./ac. (d) Rows 1½′ apart. (e) —. (v) Nil. (vi) N.A. (vii) Irrigated. (viii) 1 leaber operation and 1 spading by *khurpi*. (ix) 3.75″. (x) 7.4.1959.

2. TREATMENTS :

3 methods of applicaion of 40 lb./ac. of P_2O_5 as Super : M_0=Control (no manure), M_1=On the surface and M_2=At plough depth.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) 38′×29′. (b) 36′×27′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Grain and straw yield. (iv) (a) to (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 863 lb./ac. (ii) 63.5 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2
Av. yield	875	872	841

S.E./mean = 25.9 lb./ac.

Crop :- Gram *(Rabi)*. **Ref :- Bh. 59(149).**
Site :- Agri Res. Instt., Sabour. **Type :- 'M'.**

Object :—To test the effect of deep placement of Super on crop yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Jowar*. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 18.11.1959. (iv) (a) 2 ploughings. (b) Line sowing. (c) 30 srs./ac. (d) Rows 1½′ apart. (e) N.A. (v) Nil. (vi) ST—4 (late). (vii) Irrigated. (viii) 1 weeding by *khurpi* and 1 operation by hand hoe. (ix) 3.20″. (x) 2.4.1960.

2. TREATMENTS :

Same as in expt. no. 58(234) on page 613.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 6. (iv) (a) 31′×21′. (b) 29′×19′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Yield of grain and straw. (iv) (a) to (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 713 lb./ac. (ii) 85.9 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2
Av. yield	659	754	725

S.E./mean = 35.1 lb./ac.

Crop :- Gram *(Rabi)*. **Ref :- Bh 56(112)**
Site :- Bot. Sub-Stn., Sepaya. **Type :- 'M'.**

Object :—To find out the effect of different kinds of phosphates on crop yield.

1. BASAL CONDITIONS:

(i) (a) Gram—Paddy—Gram. (b) Paddy. (c) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (ii) (a) Clayey loam. (b) N.A. (iii) 20.11.1956./— (iv) (a) 3 ploughings by Bihar plough. (b) Behind the plough. (c) 60 lb./ac. (d) Rows 1′ apart. (e) —. (v) Nil. (vi) ST—4. (vii) Irrigated. (viii) 1 weeding. (ix) 1.85″. (x) 21.4.1957.

2. TREATMENTS:

5 sources of P_2O_5 at 40 lb./ac.: S_0=Control (no manure), S_1=Super, S_2=B.M. S_3=Rock phos. and S_4= Di-cal. Phos.

3. DESIGN:

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) and (b) 33′×22′. (v) Nil. (vi) Yes.

4. GENERAL:

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) 1956—1959. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS:

(i) 456 lb./ac. (ii) 152.0 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	S_0	S_1	S_2	S_3	S_4
Av. yield	308	606	414	499	452

S.E./mean = 62.1 lb./ac.

Crop :- Gram *(Rabi)*. **Ref :- Bh. 57(125).**

Site :- Bot. Sub-Stn., Sepaya. **Type :- 'M'.**

Object :—To find out the effect of different kinds of phosphates on crop yield.

1. BASAL CONDITIONS:

(i) (a) Nil. (b) *Jowar*. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 10.11.1957/— (iv) (a) 2 ploughings by Bihar plough. (b) Behind the plough. (c) 30 srs./ac. (d) Rows 1′ apart. (e) —. (v) Nil. (vi) N.P.—58. (vii) Unirrigated. (viii) Weeding by *Khurpi*. (ix) 1.09″. (x) 18.4.1958.

2. TREATMENTS:

Same as in expt. no 56(112) above.

3. DESIGN:

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) 30′×23′. (b) 27′×20′. (v) 1½′×1½′. (vi) Yes.

4. GENERAL:

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) 1956—1959. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS:

(i) 581 lb./ac. (ii) 168.6 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	S_0	S_1	S_2	S_3	S_4
Av. yield	309	1009	578	538	471

S.E./mean = 68.8 lb./ac.

Crop :- Gram (*Rabi*). **Ref :- Bh. 58(125).**

Site :- Bot. Sub-Stn., Sepaya. **Type :- M'.**

Object :—To find out the effect of different kinds of phosphates on crop yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Jowar.* (c) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy loam. (b) N.A. (iii) 29.11.1958. (iv) (a) 2 ploughings by Bihar plough. (b) Behind the plough. (c) 30 srs./ac. (d) Rows 1′ apart. (e) —. (v) Nil. (vi) N.P.—58. (vii) Irrigated. (viii) Weeding by *khurpi.* (ix) 2.44″. (x) 24.4.1959.

2. TREATMENTS :

Same as in expt. no. 56(112) on page 615.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) and (b) 45′×12′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yied. (iv) (a) 1956—1959. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 371 lb./ac. (ii) 58.9 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	S_0	S_1	S_2	S_3	S_4
Av. yield	202	592	282	323	457

S.E /mean = 24.0 lb./ac.

Crop :- Gram *(Rabi)*. **Ref :- Bh 59(65).**

Site :- Bot. Sub-Stn., Sepaya. **Type :- 'M'.**

Object :—To find out the effect of different kinds of Phosphates on crop yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Moong.* (c) Nil. (ii) (a) Clay loam (b) N.A. (iii) 19.11.1959. (iv) (a) 2 ploughings by Bihar plough. (b) Behind the plough. (c) 30 srs./ac. (d) Rows 1′ apart. (e)—. (v) Nil. (vi) NP—58. (vii) Irrigated. (viii) 1 weeding by *Khurpi.* (ix) 2.82″. (x) 23, 24.4.1960.

2. TREATMENTS :

Same as in expt. no. 56(112) on page 614.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 37′×35′. (b) 33′×33′. (v) 2′×1′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) 1956—1959. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 592 lb./ac. (ii) 390.8 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	S_0	S_1	S_2	S_3	S_4
Av. yield	437	843	604	517	560

S.E./mean 195.4 lb./ac.

Crop :- Gram *(Rabi)*. **Ref :- Bh 56(109)**

Site :- Bot. Sub-Stn., Sepaya. **Type :- 'M'.**

Object ;—To test the effect of trace elements on yield of Gram.

1. BASAL CONDITIONS :

(i) (a) Gram—Fallow—Gram. (b) Fallow. (c) Nil. (ii) (a) Clayey loam. (b) N.A. (iii) 4.12.1956./— (iv) (a) 3 ploughings by Bihar plough. (b) Behind the plough (c) 60 lb./ac. (d) Rows 1′ apart. (e) —. (v) 10 C L./ac. of compost. (vi) NP—58. (vii) Irrigated. (viii) 1 weeding and 1 earthing. (ix) 1·72″. (x) 23.4.1957.

2. TREATMENTS :

14 Trace element treatments : T_0=Control, T_1=40 lb./ac. of N as A/S+40 lb /ac. of P_2O_5 as Super+40 lb./ac. of K_2O as Mur. Pot., $T_2=T_1+10$ lb /ac. of $MnSO_4$, $T_3=T_1+20$ lb./ac. of $MnSO_4$, $T_4=T_1+10$ lb./ac. of $ZnSO_4$, $T_5=T_1+20$ lb./ac. of $ZnSO_4$, $T_6=T_1+10$ lb./ac. of Borax, $T_7=T_1+20$ lb./ac. of Borax, $T_8=T_1+10$ lb./ac. of $CuSO_4$ $T_9=T_1+20$ lb./ac. of $CuSO_4$, $T_{10}=T_1+10$ lb./ac. of $FeSO_4$, $T_{11}=T_1+20$ lb./ac. of $FeSO_4$, $T_{12}=T_1+1$ lb./ac. of Molybdenum and $T_{13}=T_1+2$ lb./ac. of Molybdenum.

3. DESIGN :

(i) R.B.D. (ii) (a) 14. (b) 540′×15′. (iii) 5. (iv) (a) 36′×15′. (b) 34′×13′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) Nil. (vii) Crop failed in 1957.

5. RESULTS :

(i) 890 in lb./ac. (ii) 354.5 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	532	1013	740	952	1140	1256	821

Treatment	T_7	T_8	T_9	T_{10}	T_{11}	T_{12}	T_{13}
Av. yield	879	1033	740	962	750	881	765

S.E./mean = 158.2 lb./ac.

Crop :- Gram ***(Rabi).*** **Ref :- Bh. 58(130).**

Site :- Bot. Sub-Stn., Sepaya. **Type :- 'M'.**

Object :—To test the effect of trace elements on yield of Gram.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Jowar.* (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 18.11.1958. (iv) (a) 2 ploughings by Bihar plough. (b) Behind the plough. (c) 30 srs./ac. (d) Rows 1′ apart. (e) —. (v) Nil. (vi) NP—58. (vii) Irrigated. (viii) 1 weeding by *khurpi.* (ix) 14.19″. (x) 26.4.1959.

2. TREATMENTS :

Same as in expt. no. 56(109) on page 616.

3. DESIGN :

(i) R.B.D. (ii) (a) 14. (b) N.A. (iii) 4. (iv) (a) 48′×14′. (b) 45′×12′. (v) 1½′×1′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) 1958—1959. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 544 lb./ac. (ii) 75.8 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatmant	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	323	363	484	625	544	625	605

Treatment	T_7	T_8	T_9	T_{10}	T_{11}	T_{12}	T_{13}
Av. yield	786	363	686	383	605	544	686

S.E./mean = 37.9 lb./ac.

Crop :- Bengal Gram *(Rabi)*. **Ref :- Bh. 58(SFT).**

Centre :- Bhagalpur (c.f.). **Type :- 'M'**

Object :—Type C—To compare the response of leguminous crops to alternative sources and levels of Phosphate.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Alluvial. (iii) to (v) Nil. (vi) October—November. (vii) to (ix) N.A. (x) March—April.

2. TREATMENTS :

0 =Control (no manure).
p_1 =30 lb./ac. of P_2O_5 as Super.
p_2 =60 lb./ac. of P_2O_5 as Super.
p_1'=30 lb./ac. of P_2O_5 as dicalcium phosphate.
p_2'=60 lb./ac. of P_2O_5 as dicalcium phosphates.

3. DESIGN :

(i) and (ii) The district has been divided into four agriculturally homogeneous zones and one field assistant posted in each zone. The field assistant conducts the trials in one Revenue circle or thana in the zone and the circle/thana is changed once in two years within the same zone. Each field assistant is required to conduct 31 trials in a year, 8 on a *kharif* cereal, 8 on a *rabi* cereal, 8 on a cash crops, 4 on an oilseed crop and 3 on a leguminous crop. Half the number of trials conducted are of type A and the other half of type B on crops other than the legumes. The three trials on legumes are of type C. Residual effects of phosphate application are studied on type C trials in two out of the four zones in each district every year. The above experiments are laid out in randomly located fields in randomly selected villages in each of the 4 zones at the rate of one experiment per village. (iii) (a) N.A. (b) 1/80 ac. (iv) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain yield. (iv) (a) 1958—contd. (b) No. (c) N.A. (v) As per design. (vi) and (vii) Nil.

5. RESULTS :

Treatment	0	p_1	p_2	p_1'	p_2'
Av. yield	675	815	922	765	938

G.M. = 823 lb./ac. ; S.E. = 29.7 lb./ac. and no. of trials = 11.

Crop :- Bengal Gram *(Rabi)*. **Ref :- Bh. 59(SFT).**

Centre :- Bhagalpur (c.f.). **Type :- 'M'.**

Object :—Type C—To compare the response of leguminous crops to alternative sources and levels of phosphate.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Alluvial. (iii) to (v) Nil. (vi) October—November. (vii) to (ix) N.A. (x) March—April.

2. TREATMENTS :

0 =Control.
p_1=30 lb./ac. of P_2O_5 as Super.
p_2=60 lb./ac. of P_2O_5 as Super.

3. DESIGN :

(i) and (ii) The district has been divided into four agriculturally homogeneous zones and one field assistant posted in each zone. The field assistant conducts the trials in one Revenue circle or thana in the zone and the circle/thana is changed once in two years within the same zone. Each field assistant is required to conduct 31 trials in a year, 8 on a *kharif* cereal, 8 on a *rabi* cereal, 8 on a cash crops, 4 on an oilseed crop and 3 on a leguminous crop. Half the number of trials conducted are of type A and the other half of type B on crops other than the legumes. The three trials on legumes are of type C. Residual effects of phosphate application are studied on type C trials in two out of the four zones in each district every year. The experiments are laid out in randomly located fields in randomly selected villages in each of the 4 zones at the rate of one experiment per village. (iii) (a) N.A. (b) 1/80 ac. (iv) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain yield. (iv) (a) 1958—contd. (b) No. (c) Nil. (v) As per design. (vi) and (vii) Nil.

5. RESULTS :

Treatment	0	p_1	p_2
Av. yield	543	634	741

G.M. = 639 lb./ac. ; S.E. = 9.3 lb./ac. and no. of trials = 12.

Crop :- Bengal Gram *(Rabi)*. **Ref :- Bh. 59(SFT).**

Centre :- Champaran (c.f.). **Type :- 'M'.**

Object :—Type C—To compare the response of leguminous crops to alternative sources and levels of phosphate.

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 59(SFT) type C on page 618 conducted at Bhagalpur.

5. RESULTS :

Treatment	0	p_1	p_2
Av. yield	617	946	1053

G.M. = 872 lb./ac. ; S.E. = 48.9 lb./ac. and no. of trials = 6.

Crop :- Bengal Gram *(Rabi)*. **Ref :- Bh. 58(SFT).**

Centre :- Gaya (c.f.). **Type :- 'M'.**

Object :—Type C—To compare the response of leguminous crops to alternative sources and levels of phosphate.

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 58(SFT) type C on page 618 conducted at Bhagalpur.

5. RESULTS :

Treatment	0	p_1	p_2	p_1'	p_2'
Av. yield	691	856	897	922	1020

G.M. = 877 lb./ac. ; S.E. = 7.6 lb./ac. and no. of trials = 11.

Crop :- Bengal Gram *(Rabi)*. **Ref :- Bh. 59(SFT).**

Centre :- Gaya (c.f.). **Type :- 'M'.**

Object :—Type C—To compare the response of leguminous crops to alternative sources and levels of phosphate.

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 59(SFT) type C on page 618 conducted at Bhagalpur.

5. RESULTS :

Treatment	0	p_1	p_2
Av. yield	798	1004	1136

G.M = 979 lb./ac. ; S.E. = 23.3 lb./ac. and no. of trials = 9.

Crop :- Bengal Gram *(Rabi)*. **Ref :- Bh. 58(SFT).**

Centre :- Monghyr (c.f.). **Type :- 'M'.**

Object :—Type C—To compare the responses of leguminous crops to alternative sources and levels of phosphate.

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 58(SFT) type C on page 618 conducted at Bhagalpur.

5. RESULTS :

Treatment	0	p_1	p_2	p_1'	p_2'
Av. yield	1012	1218	1539	1226	1580

G.M. = 1315 lb./ac. ; S.E. = 64.0 lb./ac. and no. of trials = 9.

Crop :- Bengal Gram *(Rabi)*. **Ref :- Bh. 59(SFT).**

Centre :- Monghyr (c.f.). **Type :- 'M'**

Object :—Type C—To compare the response of leguminous crops to alternative sources and levels of phosphate.

1. BASAL CONDITIONS to GENERAL :

Same as in expt. no. 59(SFT) type C on page 618 conducted at Bhagalpur.

5. RESULTS :

Treatment	0	p_1	p_2
Av. yield	667	790	913

G M. = 790 lb./ac. ; S.E. = 24.4 lb./ac. and no. of trials = 3.

Treatment	0	p_1	p_2
Av. yield	379	535	716

G.M. = 543 lb./ac. ; S.E. = 12.2 lb./ac. and no. of trials = 6.

Crop :- Bengal Gram *(Rabi)*. **Ref :- Bh. 58(SFT).**

Centre :- Muzaffarpur (c.f). **Type :- 'M'.**

Object :—Type C—To compare the response of leguminous crops to alternative sources and levels of phosphate.

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 58(SFT) type C on page 618 conducted at Bhagalpur

5. RESULTS :

Treatment	0	p_1	p_2	p_1'	p_2'
Av. yield	1210	1201	1769	1531	1884

G.M. = 1519 lb./ac. ; S.E. = 52.4 lb./ac. and no. of trials = 12.

Crop :- Bengal Gram *(Rabi)*. **Ref :- Bh. 59(SFT).**

Centre :- Muzaffarpur (c.f.). **Type :- 'M'.**

Object :—Type C—To compare the response of leguminous crops to alternative sources and levels of phosphate.

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 59(SFT) type C on page 618 conducted at Bhagalpur.

5. RESULTS :

Treatment	0	p_1	p_2
Av. yield	749	741	1053

G.M. = 848 lb./ac. ; S.E. = 33.7 lb./ac and no. of trials = 12.

Crop :- Bengal Gram. *(Rabi)*. **Ref :- Bh. 58(SFT).**

Centre :- Patna (c.f.). **Type :- 'M'.**

Object :—Type C—To compare the response of leguminous crops to alternative sources and levels of Phosphate.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Other alluvial. (iii) Nil. (iv) and (v) N.A. (vi) October—November 1958. (vii) to (ix) N.A. (x) March—April 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type C on page 618 conducted at Bhagalpur.

5. RESULTS :

Treatment	0	p_1	p_2	p_1'	p_2'
Av. yield	897	1078	1218	1292	1300

G.M. = 1157 lb /ac. ; S.E. = 29.1 lb./ac. and no. of trials = 6.

Crop :- Bengal Gram *(Rabi)*. **Ref :- Bh. 59(SFT).**

Centre :- Patna (c.f.). **Type :- 'M'.**

Object :—Type C—To compare the response of leguminous crops to alternative sources and levels of phosphate.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Other alluvial. (iii) Nil. (iv) and (v) N.A. (vi) October—November 1959. (vii) to (ix) N.A. (x) March—April 1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type C on page 618 conducted at Bhagalpur.

5. RESULTS :

Treatment	0	p_1	p_2
Av. yield	658	946	1152

G.M. = 919 lb./ac. ; S.E. = 23.3 lb./ac. and no. of trials = 6.

Crop :- Bengal Gram *(Rabi)*. **Ref :- Bh. 59(SFT).**

Centre :- Purnea (c.f.). **Type :- 'M'.**

Object :—Type C—To compare the response of leguminous crops to alternative sources and levels of phosphate.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Other alluvial. (iii) Nil. (iv) and (v) N.A. (vi) October—November, 1959. (vii) to (ix) N.A. (x) March—April 1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt no 59(SFT) type C on page 618 conducted at Bhagalpur.

5. RESULTS :

Treatment	0	p_1	p_2
Av. yield	864	955	1086

G.M. = 968 lb./ac. ; S.E. = 20.9 lb /ac. and no. of trials = 9.

Crop :- Bengal Gram *(Rabi)*. **Ref :- Bh. 58(SFT).**

Centre :- Santhal Paraganas (c.f.). **Type :- 'M'.**

Object :—Type C—To compare the response of leguminous crops to alternative sources and levels of phosphate.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red. (iii) Nil. (iv) and (v) N A. (vi) October—November 1958. (vii) to (ix) N.A. (x) March—April 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt no. 58(SFT) type C on page 618 conducted at Bhagalpur.

5. RESULTS :

Treatment	0	p_1	p_2	p_1'	p_2'
Av. yield	741	987	1086	1177	1094

G.M. = 1017 lb./ac. ; S.E. = 24.4 lb./ac. and no. of trials = 6.

Crop :- Bengal Gram *(Rabi)*. **Ref :- Bh. 59(SFT).**

Centre :- Santhal Paraganas (c.f.). **Type :- 'M'.**

Object :—Type C –To compare the response of leguminous crops to alternative sources and levels of phosphate.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red. (iii) Nil. (iv) and (v) N.A. (vi) October—November 1959. (vii) to (ix) N.A. (x) March—April 1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type C on page 618 conducted at Bhagalpur.

5. RESULTS :

Treatment	0	p_1	p_2
Av. yield	971	1243	1391

G.M. = 1202 lb./ac. ; S.E. = 46.5 lb./ac. and no. of trials = 12.

Crop :- Bengal Gram *(Rabi).* **Ref :- Bh. 58(SFT).**
Site :- Shahabad (c.f.). **Type :- 'M'.**

Object :—Type C—To compare the responses of leguminous crops to alternative sources and levels of phosphate.

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 58(SFT) type C on page 618 conducted at Bhagalpur.

5. RESULTS :

Treatment	0	p_1	p_2	p_1'	p_2'
Av. yield	732	1053	1168	806	987

G.M. = 949 lb./ac., S.E. = 29.7 lb./ac. and no. of trials = 6

Crop :- Bengal Gram *(Rabi).* **Ref :- Bh. 59(SFT).**
Centre :- Shahabad (c.f.). **Type :- 'M'.**

Object :—Type C—To compare the response of leguminous crops to alternative sources and levels of phosphate.

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 59(SFT) type C on page 618 conducted at Bhagalpur.

5. RESULTS :

Treatment	0	p_1	p_2
Av. yield	897	1292	1670

G.M. = 1286 lb./ac., S.E. = 28.5 lb./ac. and no. of trials = 8

Crop :- Black Gram. **Ref :- Bh. 59(SFT).**
Centre :- Ranchi (c.f.). **Type :- 'M'.**

Object :—Type C—To compare the response of leguminous crops to alternative sources and levels of phosphate.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red. (iii) Nil. (iv) to (x) N.A.

2. TREATMENTS to 4. GENERAL:

Same as in expt. no. 58(SFT) type C on page 618 conducted at Bhagalpur.

5. RESULTS :

Treatment	0	p_1	p_2
Av. yield	625	494	625

G.M. = 581 lb./ac., S.E. = 40.7 lb./ac. and no. of trials = 11

Crop :- Black Gram. **Ref :- Bh. 59(SFT).**

Centre :- Hazaribagh (c.f.). **Type :- 'M'.**

Object :—Type C—To compare the response of leguminous crops to alternative sources and levels of phosphate.

1. BASAL CONDITIONS:

(i) (a) to (c) Nil. (ii) Red. (iii) Nil. (iv) to (x) N.A.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type C on page 618 conducted at Bhagalpur.

5. RESULTS :

Treatment	0	p_1	p_2
Av. yield	436	716	1012

G.M. = 721 lb./ac., S.E. = 30.3 lb./ac. and no. of trials = 3

EXPERIMENTS OF THE FIELD EXPERIMENTAL SPECIALIST ON GRAM CROP

Object :—To find suitable manurial schedules for Gram crop.

TREATMENTS :

All combinations of (1), (2) and (3)
- (1) 3 levels of N as A/S : $N_0=0$, $N_1=10$ and $N_2=20$ lb./ac.
- (2) 3 levels of P_2O_5 as Super : $P_0=0$, $P_1=30$ and $P_2=60$ lb./ac.
- (3) 3 levels of K_2O as Mur. Pot. : $K_0=0$, $K_1=20$ and $K_2=40$ lb./ac.

I. IRRIGATED TRIALS

Serial no. : 1. **Block (Dist.) :** Giriak (Patna). **Soil type :** Loam. **Years :** 1956 to 1958.

RESULTS :

(i) 881 lb./ac. (ii) 245.6 lb./ac. (iii) Only the main effects of N, P and K are highly significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	722	787	763	708	768	796	757
N_1	832	951	933	787	951	978	905
N_2	873	1052	1019	827	1010	1106	981
Mean	809	930	905	774	910	960	881
P_0	741	791	791				
P_1	850	956	923				
P_2	837	1043	1000				

Serial no. : 2. **Block (Dist.) :** Dumraon (Shahabad). **Soil type :** Sandy. **Years :** 1956 to 1959.

RESULTS :

(i) 1228 lb./ac. (ii) 113.7 lb./ac. (iii) Main effects of N, P and K are higly significant. Interaction N×P is significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	1054	1131	1150	943	1138	1255	1112
N_1	1185	1235	1272	1084	1231	1377	1231
N_2	1323	1327	1373	1231	1351	1442	1341
Mean	1187	1231	1265	1086	1240	1358	1228
P_0	1038	1087	1133				
P_1	1209	1236	1275				
P_2	1316	1370	1387				

Serial no. : 3. **Block (Dist.) :** Nawanagar (Shahabad). **Soil type :** Sandy clay. **Years :** 1956 to 1959.

RESULTS :

(i) 1354 lb./ac. (ii) 72.0 lb./ac. (iii) Main effects of N, P and K alone are highly significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	1172	1210	1328	1087	1210	1413	1237
N_1	1272	1340	1448	1214	1351	1495	1353
N_2	1413	1454	1553	1351	1454	1615	1473
Mean	1286	1335	1443	1217	1338	1508	1354
P_0	1177	1210	1265				
P_1	1297	1354	1364				
P_2	1383	1440	1700				

Serial no. : 4. **Block (Dist.) :** Piro (Shahabad). **Soil type :** Loam. **Years :** 1956 to 1958.

RESULTS :

(i) 825 lb./ac. (ii) 183.4 lb./ac. (iii) Main effects of N, P and K alone are highly significant. (iv) Av. yield of grain in lb./ac.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	558	590	640	525	631	631	596
N_1	764	920	973	704	979	974	886
N_2	924	988	1066	892	1024	1062	993
Mean	749	833	893	707	878	889	825
P_0	690	672	759				
P_1	759	870	1006				
P_2	797	956	913				

II. UNIRRIGATED TRIALS.

Serial no. : 1. **Block (Dist.) :** Benipatti (Darbhanga). **Soil type :** Clay, Sandy. **Years :** 1956 to 1958.

RESULTS :

(i) 705 lb./ac. (ii) 98.3 lb./ac. (iii) Main effects of P and K alone are highly significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	556	590	634	511	624	645	593
N_1	741	720	772	645	785	803	744
N_2	761	775	800	717	813	806	779
Mean	686	695	735	624	741	751	705
P_0	601	624	648				
P_1	730	737	755				
P_2	727	724	803				

Serial no. : 2. **Block (Dist.) :** Khajauli (Darbhanga). **Soil type :** Clay. **Years :** 1956 to 1959.

RESULTS :

(i) 948 lb./ac. (ii) 84.2 lb./ac. (iii) Main effects of N and P alone are highly significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	799	886	896	663	881	1037	860
N_1	959	964	992	873	987	1055	972
N_2	959	1023	1051	977	1005	1051	1011
Mean	906	958	980	838	958	1048	948
P_0	796	854	863				
P_1	931	946	996				
P_2	990	1073	1080				

Serial no. : 3. **Block (Dist.) :** Warisnagar (Darbhanga). **Soil type :** Loam. **Years :** 1957 to 1959.

RESULTS :

(i) 1462 lb./ac. (ii) 98.7 lb./ac. (iii) Main effects of N, P and K alone are highly significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	1240	1322	1420	965	1448	1569	1327
N_1	1404	1552	1471	1196	1525	1706	1476
N_2	1503	1635	1613	1377	1580	1794	1584
Mean	1382	1503	1501	1179	1518	1690	1462
P_0	1075	1251	1212				
P_1	1492	1514	1547				
P_2	1580	1744	1745				

Serial no.: 4. **Block (Dist.) :** Arwal (Gaya). **Soil type :** Clay. **Years : 1956 to 1958.**

RESULTS :

(i) 1179 lb./ac. (ii) 122.0 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	841	1129	1325	905	1133	1257	1098
N_1	928	1225	1440	964	1271	1358	1198
N_2	960	1280	1481	1019	1298	1403	1240
Mean	910	1211	1415	963	1234	1339	1179
P_0	731	992	1165				
P_1	955	1284	1463				
P_2	1042	1358	1618				

Serial no.: 5. **Block (Dist.) :** Aurangabad (Gaya). **Soil type :** N.A. **Years :** 1956 and 1957.

RESULTS :

(i) 560 lb./ac. (ii) 33.9 lb./ac. (iii) Main effect of N and P alone are highly significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	439	453	451	355	439	548	447
N_1	589	589	576	439	603	713	585
N_2	630	644	672	507	658	782	649
Mean	553	562	566	434	567	681	560
P_0	424	425	453				
P_1	540	576	584				
P_2	695	685	662				

Serial no.: 6. **Block (Dist.) :** Belaganj (Gaya). **Soil type :** Loam. **Years :** 1956 to 1959

RESULTS :

(i) 1257 lb./ac. (ii) 131.9 lb./ac. (iii) Main effects of N and P alone are highly significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	1158	1168	1190	1097	1207	1212	1172
N_1	1232	1256	1287	1184	1261	1330	1258
N_2	1316	1366	1338	1286	1366	1368	1340
Mean	1235	1263	1272	1189	1278	1303	1257
P_0	1153	1218	1196				
P_1	1264	1272	1298				
P_2	1289	1300	1321				

Serial no. : 7. **Block (Dist.) :** Bodh Gaya (Gaya). **Soil type :** Loam. **Years :** 1956 to 1958.

RESULTS :

(i) 751 lb./ac. (ii) 102.8 lb./ac. (iii) Main effects of N and P alone are highly significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	658	675	691	615	691	718	675
N_1	763	746	762	702	746	823	757
N_2	812	812	839	779	823	862	821
Mean	744	744	764	699	753	801	751
P_0	664	697	735				
P_1	746	779	735				
P_2	823	757	823				

Serial no. : 8. **Block (Dist.) :** Dand Nagar (Gaya). **Soil type :** N.A. **Years :** 1956 to 1958.

RESULTS :

(i) 916 lb./ac. (ii) 124.5 lb./ac. (iii) Main effects of N, P and K alone are highly significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	718	845	824	565	845	977	796
N_1	944	1010	986	735	1026	1179	980
N_2	916	1010	993	697	1026	1196	973
Mean	859	955	934	666	966	1117	916
P_0	588	708	702				
P_1	974	925	998				
P_2	1016	1232	1103				

Serial no. : 9. **Block (Dist.) :** Gaya Muffasil (Gaya). **Soil type :** N.A. **Years :** 1956 to 1958.

RESULTS :

(i) 630 lb./ac. (ii) 115.2 lb./ac. (iii) Main effects of N and P alone are highly significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	564	591	576	537	576	619	577
N_1	619	616	630	594	610	661	622
N_2	674	716	680	649	692	728	690
Mean	619	641	629	593	626	669	630
P_0	573	606	601				
P_1	634	640	603				
P_2	649	676	682				

Serial no. : 10. **Block (Dist.) :** Ghoshi (Gaya). **Soil type :** Sandy loam. **Years :** 1956 to 1958.

RESULTS :

(i) 1103 lb./ac. (ii) 119.0 lb./ac. (iii) Main effects of N, P and K alone are highly significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	983	983	1073	717	1060	1261	1013
N_1	1042	1128	1174	846	1147	1353	1115
N_2	1151	1198	1197	973	1193	1381	1182
Mean	1059	1103	1148	845	1133	1332	1103
P_0	808	850	877				
P_1	1096	1134	1170				
P_2	1272	1325	1396				

Serial no. : 11. Block (Dist.) : Gobindpur (Gaya). **Soil type :** Loam. Years : 1956 and 1957.

RESULTS :

(i) 580 lb./ac. (ii) 45.3 lb./ac. (iii) Main effects of N and P alone are highly significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	535	514	541	494	554	542	530
N_1	555	562	578	555	570	569	565
N_2	631	658	646	631	652	652	645
Mean	574	578	588	560	592	588	580
P_0	555	555	569				
P_1	592	583	603				
P_2	574	597	592				

Serial no. : 12. **Block (Dist.) :** Jehanabad (Gaya). **Soil type :** Loam. **Years :** 1956 to 1958.

RESULTS :

(i) 1149 lb./ac. (ii) 142.8 lb./ac. (iii) Main effects of N, P and K alone are highly signifiant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	936	1155	1193	911	1163	1210	1095
N_1	979	1210	1306	985	1188	1322	1165
N_2	1023	1231	1308	998	1215	1349	1187
Mean	979	1199	1269	965	1189	1294	1149
P_0	804	1020	1070				
P_1	1020	1245	1300				
P_2	1114	1330	1437				

Serial no. : 13. **Block (Dist.) :** Karakole (Gaya). **Soil type :** Sandy loam. **Years :** 1957 to 1959.

RESULTS :

(i) 1061 lb./ac. (ii) 152.4 lb./ac. (iii) Main effects of N, P and K alone are highly significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	891	982	938	732	987	1093	937
N_1	1019	1143	1152	896	1129	1289	1105
N_2	1093	1106	1226	919	1226	1280	1142
Mean	1001	1077	1105	849	1114	1221	1061
P_0	792	896	859				
P_1	1052	1124	1166				
P_2	1160	1211	1291				

Serial no. : 14. **Block (Dist.) :** Khizir Sarai (Gaya). **Soil type :** N.A. **Years :** 1956 to 1958.

RESULTS :

(i) 1502 lb./ac. (ii) 107.3 lb./ac. (iii) Main effects of N and P are highly significant. Main effect of K is significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	1218	1273	1306	1070	1306	1421	1266
N_1	1475	1514	1498	1306	1508	1673	1496
N_2	1695	1761	1772	1553	1766	1909	1743
Mean	1463	1516	1525	1310	1527	1668	1502
P_0	1236	1349	1344				
P_1	1491	1515	1574				
P_2	1661	1684	1658				

Serial no. : 15. **Block (Dist.) :** Makhdumpur (Gaya). **Soil type :** Loam. **Years :** 1956 to 1958.

RESULTS :

(i) 1012 lb./ac. (ii) 238.5 lb./ac. (iii) Only the interaction N×P is highly significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	932	987	1033	823	1024	1106	984
N_1	928	1043	969	1075	905	960	980
N_2	1070	1047	1102	1037	1111	1070	1073
Mean	977	1026	1035	978	1013	1045	1012
P_0	900	1043	992				
P_1	978	1042	1019				
P_2	1051	992	1092				

Serial no. : 16. **Block (Dist.) :** Nabinagar (Gaya). **Soil type :** Clay. **Years :** 1956.

RESULTS :

(i) 1040 lb./ac. (ii) 90.1 lb./ac. (iii) Main effects of N, P and K are highly significant. Interaction N×K is significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	713	768	782	589	796	878	754
N_1	864	1111	1069	754	1097	1194	1015
N_2	1344	1344	1363	1097	1399	1554	1350
Mean	974	1074	1071	813	1097	1208	1040
P_0	766	837	837				
P_1	1029	1137	1125				
P_2	1126	1248	1252				

Serial no. : 17. **Block (Dist.) :** Nawadah (Gaya). **Soil type :** Clay loam. **Years :** 1956 to 1959.

RESULTS :

(i) 776 lb./ac. (ii) 107.0 lb./ac. (iii) Main effects of N and P alone are highly significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	667	725	736	584	736	807	709
N_1	776	772	788	691	788	858	779
N_2	847	831	842	752	854	914	840
Mean	763	776	789	676	793	860	776
P_0	666	670	691				
P_1	779	796	803				
P_2	844	862	873				

Serial no. : 18. **Block (Dist.) :** Pakribarawan (Gaya). **Soil type :** Loam. **Years :** 1956 to 1959

RESULTS :

(i) 1754 lb./ac. (ii) 240.0 lb./ac. (iii) Main effects of N, P and interaction N×K are highly significant. Main effects of K and interactions N×P and P×K are significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	1481	1697	1667	1279	1721	1845	1615
N_1	1837	1587	1917	1488	1961	1892	1780
N_2	1869	1872	1860	1549	1903	2149	1867
Mean	1729	1719	1815	1439	1862	1962	1754
P_0	1361	1460	1495				
P_1	1838	1872	1875				
P_2	1988	1824	2074				

Serial no. : 19. **Block (Dist.) :** Rajauli (Gaya). **Soil type :** Loam. **Years :** 1956 to 1959.

RESULTS :

(i) 1247 lb./ac. (ii) 194.2 lb./ac. (iii) Main effect of N is significant and main effect of P is highly significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	1156	1140	1273	1141	1136	1293	1190
N_1	1242	1289	1284	1163	1250	1403	1272
N_2	1215	1359	1262	1187	1293	1356	1279
Mean	1204	1263	1273	1164	1226	1351	1247
P_0	1136	1179	1176				
P_1	1198	1211	1270				
P_2	1279	1399	1374				

Serial no. : 20. **Block (Dist.) :** Sherghati (Gaya). **Soil type :** Clay. **Years :** 1956 to 1959.

RESULTS :

(i) 1210 lb./ac. (ii) 142 3 lb./ac. (iii) Main effects of N, P and interaction N×K alone are highly significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	961	1058	1058	863	1058	1156	1026
N_1	1270	1305	1351	1035	1407	1484	1309
N_2	1363	1210	1314	1054	1372	1461	1296
Mean	1198	1191	1241	984	1279	1367	1210
P_0	941	987	1023				
P_1	1290	1234	1312				
P_2	1363	1352	1387				

Serial no. : 21. **Block (Dist.) :** Tekari (Gaya). **Soil type :** Sandy. **Years :** 1956 to 1959

RESULTS :

(i) 1230 lb./ac. (ii) 159 1 lb./ac. (iii) Main effects of N, P, K and interaction N×P alone are highly significant. (iv) Av. yield of grain in lb./ac

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	969	1000	1134	753	1085	1265	1034
N_1	1140	1204	1262	991	1289	1326	1202
N_2	1408	1438	1518	1 82	1485	1697	1455
Mean	1172	1214	1305	975	1286	1429	1230
P_0	906	972	1048				
P_1	1216	1253	1390				
P_2	1395	1417	1476				

Serial no. : 22. **Block (Dist.) :** Warisaliganj (Gaya). **Soil type :** Sandy. **Years :** 1956 to 1958.

RESULTS :

(i) 1240 lb./ac. (ii) 127.0 lb./ac. (iii) Main effects of N, P and K alone are highly significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	938	1103	1054	911	1026	1158	1032
N_1	1234	1366	1295	1207	1289	1399	1298
N_2	1300	1410	1464	1311	1415	1448	1391
Mean	1157	1293	1271	1143	1243	1335	1240
P_0	1086	1152	1190				
P_1	1191	1278	1261				
P_2	1195	1448	1362				

Serial no. : 23. **Block (Dist.) :** Wazirganj (Gaya). **Soil type :** Sandy loam. **Years :** 1956 to 1958.

RESULTS :

(i) 1441 lb./ac. (ii) 152.4 lb./ac. (iii) Main effect of N, P and K alone are highly significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	1157	1445	1610	1218	1478	1517	1404
N_1	1165	1530	1657	1319	1470	1563	1451
N_2	1221	1500	1681	1319	1498	1585	1467
Mean	1181	1492	1649	1285	1482	1555	1441
P_0	1042	1338	1475				
P_1	1237	1522	1687				
P_2	1264	1615	1785				

Serial no. : 24. **Block (Dist.) :** Gobindganj (Gaya). **Soil type :** Sandy. **Years :** 1956 to 1959.

RESULTS :

(i) 886 lb./ac. (ii) 93.8 lb./ac. (iii) Main effects of N, P and K alone are highly significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	782	806	805	651	854	888	798
N_1	905	919	936	758	970	1032	920
N_2	854	987	980	771	953	1097	940
Mean	847	904	907	727	926	1006	886
P_0	722	741	717				
P_1	875	956	946				
P_2	944	1015	1058				

Serial no. : 25. **Block (Dist.)** :Narkatiaganj (Motihari). **Soil type** : Sandy. **Years :** 1956 to 1959.

RESULTS :

(i) 941 lb./ac. (ii) 119.2 lb./ac. (iii) Main effects of N, P and K are highly significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	820	864	874	710	872	976	853
N_1	919	963	985	763	1034	1070	956
N_2	955	1048	1036	831	1072	1136	1013
Mean	898	958	965	768	993	1061	941
P_0	733	784	787				
P_1	939	1021	1018				
P_2	1022	1070	1090				

Serial no. : 26. **Block (Dist.)** : Ramnagar (Motihari). **Soil type** : Clay. **Years** : 1957 to 1959.

RESULTS :

(i) 1063 lb./ac. (ii) 142.5 lb./ac. (iii) Main effects of P and K alone are highly significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	910	1006	1006	791	974	1157	974
N_1	983	1120	1156	951	1056	1253	1087
N_2	1060	1134	1189	965	1070	1349	1128
Mean	984	1087	1117	902	1033	1253	1063
P_0	837	896	974				
P_1	964	1052	1083				
P_2	1152	1312	1294				

Serial no. : 27. **Block (Dist.)** : Asthawan (Patna). **Soil type** : Sandy loam and clay loam. **Years :** 1956 to 1959.

RESULTS :

(i) 996 lb./ac. (ii) 197.0 lb./ac. (iii) Only the main effects of N, P and K are highly significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	768	805	780	649	853	850	784
N_1	987	1036	1075	862	1066	1170	1033
N_2	1119	1170	1225	987	1201	1326	1171
Mean	958	1004	1027	833	1040	1115	996
P_0	787	844	869				
P_1	1015	1051	1054				
P_2	1073	1116	1157				

Serial no. : 28. **Block (Dist.) :** Bakhtiarpur (Patna). **Soil type :** Loam and clay. **Years :** 1956 to 1959.

RESULTS :

(i) 1196 lb./ac. (ii) 225.3 lb./ac. (iii) Only the main effects of N, P, K and interaction N×P are highly significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	1008	1029	1066	758	1087	1258	1034
N_1	1158	1207	1217	1025	1217	1340	1194
N_2	1303	1368	1405	1196	1378	1502	1359
Mean	1156	1201	1230	993	1227	1367	1196
P_0	998	953	1029				
P_1	1207	1252	1224				
P_2	1264	1400	1436				

Serial no. : 29. **Block (Dist.) :** Barh (Patna). **Soil type :** Clay and sandy clay. **Years :** 1956 to 1959.

RESULTS :

(i) 1299 lb./ac. (ii) 226.1 lb./ac. (iii) Only the main effects of N and P are highly significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	1086	1172	1144	980	1187	1234	1134
N_1	1324	1324	1357	1156	1368	1481	1335
N_2	1387	1449	1454	1207	1493	1591	1430
Mean	1266	1315	1318	1114	1349	1435	1299
P_0	1061	1228	1152				
P_1	1317	1363	1368				
P_2	1419	1454	1434				

Serial no. : 30. **Block (Dist.) :** Bihta (Patna). **Soil type :** Loam and clay loam. **Years :** 1956 to 1958.

RESULTS :

(i) 824 lb./ac. (ii) 294.8 lb./ac. (iii) Main effect of N is highly significant and main effect of P is significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	603	730	642	565	691	718	658
N_1	790	856	807	731	834	889	818
N_2	976	987	1025	899	1009	1080	996
Mean	790	858	825	732	845	896	824
P_0	718	736	741				
P_1	790	916	829				
P_2	862	922	905				

Serial no. : 31. **Block (Dist.) :** Bikramganj (Patna). **Soil type :** Loam. **Years :** 1956 to 1959.

RESULTS :

(i) 1278 lb./ac. (ii) 269.5 lb./ac. (iii) Main effects of N, P, K and interaction N×P are highly significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	1084	1225	1312	900	1312	1408	1207
N_1	1184	1340	1266	1015	1399	1376	1263
N_2	1293	1385	1413	1243	1322	1527	1364
Mean	1187	1317	1330	1053	1344	1437	1278
P_0	992	1116	1052				
P_1	1239	1385	1408				
P_2	1331	1449	1531				

Serial no.: 32. **Block (Dist.) :** Dinapur (Patna). **Soil type :** Sandy loam. **Years :** 1956 to 1958.

RESULTS :

(i) 1154 lb./ac. (ii) 100.8 lb./ac. (iii) Only the main effects of N and P are highly significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	992	1083	1070	923	1075	1147	1048
N_1	1147	1220	1193	1110	1193	1257	1187
N_2	1198	1270	1216	1156	1239	1289	1228
Mean	1112	1191	1160	1063	1169	1231	1154
P_0	987	1097	1106				
P_1	1161	1202	1143				
P_2	1188	1275	1229				

Serial no. : 33. **Block (Dist.) :** Ekangasarai (Patna). **Soil type :** Loam clay. **Years :** 1956 to 1959.

RESULTS :

(i) 1110 lb./ac. (ii) 272.4 lb./ac. (iii) Only the main effects of N, P and K are highly significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	838	951	935	741	917	1066	908
N_1	1124	1165	1225	957	1195	1362	1171
N_2	1191	1261	1302	1046	1222	1487	1252
Mean	1051	1126	1154	915	1111	1305	1110
P_0	860	930	954				
P_1	1012	1143	1179				
P_2	1282	1304	1330				

Serial no. : 34. **Block (Dist.) :** Fatuha (Patna). **Soil type :** Clay. **Years :** 1956 to 1958.

RESULTS :

(i) 1482 lb./ac. (ii) 275.4 lb./ac. (iii) Only the main effects of N, P and K are highly significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	1145	1244	1296	1035	1275	1375	1228
N_1	1464	1622	1587	1330	1584	1759	1558
N_2	1536	1656	1786	1402	1721	1855	1659
Mean	1382	1507	1556	1256	1527	1663	1482
P_0	1172	1245	1351				
P_1	1440	1581	1560				
P_2	1533	1696	1758				

Serial no. : 35. **Block (Dist.) :** Maner (Patna). **Soil type :** Sandy loam and clay. **Years :** 1956 to 1958.

RESULTS :

(i) 653 lb./ac. (ii) 280.3 lb./ac. (iii)[Main effects of P alone is significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	681	608	671	667	653	640	653
N_1	694	676	612	612	699	672	661
N_2	676	641	618	608	613	713	645
Mean	684	642	634	629	655	675	653
P_0	672	585	631				
P_1	663	612	690				
P_2	718	727	581				

Serial no. : 36. **Block (Dist.)** Mokameh (Patna). **Soil type :** Clay. **Years :** 1956 to 1958

RESULTS :

(i) 1664 lb./ac. (ii) 326.6 lb./ac. (iii) Only the main effect of N is significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	1502	1557	1528	1399	1597	1590	1529
N_1	1666	1618	1557	1529	1666	1646	1614
N_2	1831	1927	1788	1817	1878	1851	1849
Mean	1666	1701	1624	1582	1714	1696	1664
P_0	1619	1543	1584				
P_1	1652	1769	1721				
P_2	1728	1790	1568				

Serial no. : 37. **Block (Dist.) :** Naubatpur (Patna). **Soil type :** Loam. **Years :** 1956 to 1959.

RESULTS :

(i) 917 lb./ac. (ii) 105.7 lb./ac. (iii) Only the main effects of N and P are highly significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	782	823	831	730	829	878	812
N_1	875	919	952	776	973	996	915
N_2	993	1045	1031	872	1064	1133	1023
Mean	883	929	938	793	955	1002	917
P_0	749	798	831				
P_1	913	971	982				
P_2	987	1018	1001				

Serial no. 38. **Block (Dist.) :** Paliganj (Patna). **Soil type :** Loam. **Years :** 1956 and 1957.

RESULTS :

(i) 1416 lb./ac. (ii) 231.9 lb./ac. (iii) Main effects of N, P and K alone are highly significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	1239	1316	1344	1102	1358	1440	1300
N_1	1390	1454	1490	1248	1508	1577	1444
N_2	1454	1572	1486	1363	1545	1604	1504
Mean	1361	1447	1440	1238	1470	1540	1416
P_0	1172	1298	1243				
P_1	1476	1472	1463				
P_2	1435	1572	1614				

Serial no. : 39. **Block (Dist.) :** Silao (Patna). **Soil type :** Loam. **Years :** 1956 to 1959

RESULTS :

(i) 917 lb./ac. (ii) 199.2 lb./ac. (iii) Only the main effects of N, P and K are highly significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	775	850	895	731	878	912	840
N_1	891	953	971	840	953	1022	938
N_2	908	998	1009	854	1019	1043	972
Mean	858	934	958	808	950	992	917
P_0	749	850	826				
P_1	908	957	984				
P_2	918	994	1064				

Serial no. : 40. **Block (Dist.) :** Raghunathpur (Saran). **Soil type :** Clay. **Years :** 1957 to 1959.

RESULTS :

(i) 2019 lb./ac. (ii) 100.5 lb./ac. (iii) Main effects of N, P and K alone are highly significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	1750	1882	2117	1580	2008	2161	1916
N_1	1893	2057	2051	1706	2079	2216	2000
N_2	2085	2085	2254	1816	2211	2397	2141
Mean	1909	2008	2141	1701	2099	2258	2019
P_0	1547	1706	1849				
P_1	2019	2074	2205				
P_2	2162	2244	2368				

Serial no. : 41. **Block (Dist.) :** Arrah Muffasil(Shahabad). **Soil type :** Clay. **Years :** 1956 to 1959.

RESULTS :

(i) 1627 lb./ac. (ii) 127.7 lb./ac. (iii) Main effects of N, P, K and interaction N×P are highly significant. Interaction N×K is significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	1333	1396	1450	1034	1475	1670	1393
N_1	1572	1777	1793	1267	1802	2073	1714
N_2	1665	1813	1841	1372	1857	2090	1773
Mean	1523	1662	1695	1224	1711	1944	1627
P_0	1130	1259	1284				
P_1	1626	1733	1775				
P_2	1814	1994	2025				

Serial no : 42. **Block (Dist.) :** Bihian (Shahabad). **Soil type :** Sandy clay. **Years :** 1956 to 1959.

RESULTS :

(i) 928 lb./ac. (ii) 81.5 lb./ac. (iii) Main effects of P and K are highly significant. Main effect of N and interaction P×K are significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	806	905	871	737	891	953	860
N_1	905	998	1007	847	991	1073	970
N_2	895	994	971	854	963	1043	953
Mean	869	966	950	813	948	1023	928
P_0	778	854	806				
P_1	897	977	970				
P_2	929	1066	1073				

Serial no. : 43. **Block (Dist.) :** Bikramganj (Shahabad). **Soil type :** Sandy loam. **Years :** 1956 to 1959.

RESULTS :

(i) 1168 lb./ac. (ii) 195.7 lb./ac. (iii) Main effects of N, P and K are highly significant. Interaction N×K is significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	1097	1033	1182	802	1120	1390	1104
N_1	1131	1216	1207	899	1243	1413	1185
N_2	1134	1257	1258	971	1211	1467	1216
Mean	1121	1169	1216	891	1191	1423	1168
P_0	838	905	928				
P_1	1129	1209	1237				
P_2	1395	1392	1483				

Serial no. : 44. **Block (Dist.) :** Buxar (Shahabad). **Soil type :** Loam clay. **Years :** 1956 to 1959.

RESULTS :

(i) 988 lb./ac. (ii) 160.0 lb./ac. (iii) Main effects of N, P and K alone are highly significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	919	905	987	764	960	1087	937
N_1	895	1035	1032	796	1090	1076	987
N_2	999	1076	1046	902	1076	1142	1040
Mean	938	1005	1022	821	1042	1102	988
P_0	782	826	854				
P_1	995	1083	1049				
P_2	1036	1107	1162				

Serial no. : 45. **Block (Dist.) :** Chenari (Shahabad). **Soil type :** Clay. **Years :** 1957 to 1959.

RESULTS :

(i) 1369 lb./ac. (ii) 130.7 lb./ac. (iii) Main effects of N, P and K are highly significant. Interaction N×P is significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	1138	1239	1294	878	1331	1463	1224
N_1	1353	1399	1427	1134	1449	1596	1393
N_2	1417	1504	1549	1193	1513	1764	1490
Mean	1303	1381	1423	1068	1431	1608	1369
P_0	1020	1084	1101				
P_1	1340	1440	1513				
P_2	1549	1618	1656				

Serial no. : 46. **Block (Dist.) :** Dehri-on-sone (Shahabad). **Soil type :** Sandy. **Years :** 1957 to 1959.

RESULTS:

(i) 1858 lb./ac. (ii) 180.6 lb./ac. (iii) Main effects of N and P are highly significant. Interaction P×N is significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	1475	1580	1657	1130	1722	1860	1571
N_1	1964	1975	1908	1651	1991	2205	1949
N_2	1997	2139	2029	1794	2084	2287	2055
Mean	1812	1898	1865	1525	1932	2117	1858
P_0	1459	1558	1558				
P_1	1864	1964	1969				
P_2	2113	2172	2067				

Serial no. : 47. **Block (Dist.) :** Durgawati (Shahabad). **Soil type :** Clay. **Years :** 1956 to 1959.

RESULTS :

(i) 1240 lb./ac. (ii) 190.9 lb./ac. (iii) Main effects of N and P are highly significant. Main effect of K and interractions N×P and N×K are significant. (iv) Av. yield of grain in lb /ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	1045	1091	1152	820	1168	1301	1096
N_1	1161	1264	1342	1094	1250	1423	1256
N_2	1381	1386	1340	1231	1377	1499	1369
Mean	1196	1247	1278	1048	1265	1408	1240
P_0	994	1054	1097				
P_1	1173	1305	1317				
P_2	1419	1383	1421				

Serial no. : 48. **Block (Dist.) :** Karaghat (Shahabad). **Soil type :** Loam. **Year :** 1958

RESULTS

(i) 647 lb./ac. (ii) 75.9 lb./ac. (iii) Main effects of N is significant. Main effect of P is highly significant. No other effects are significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	617	603	638	528	623	707	619
N_1	624	732	579	562	652	720	645
N_2	658	644	725	597	732	699	676
Mean	633	660	647	562	669	709	647
P_0	528	583	576				
P_1	665	690	652				
P_2	706	706	713				

Serial no. : 49. **Block (Dist.)** Kudra (Shahabad). **Soil type :** Clay. **Years :** 1957 to 1959.

RESULTS :

(i) 757 lb./ac. (ii) 75.1 lb./ac. (iii) Main effects of N, P, K and interaction N×P alone are highly significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	634	676	644	569	685	699	651
N_1	734	764	769	641	792	834	756
N_2	823	881	891	706	899	991	865
Mean	730	774	768	639	792	841	757
P_0	599	669	648				
P_1	772	812	792				
P_2	820	840	863				

Serial no. : 50. **Block (Dist.) :** Mohaniyan (Shahabad). **Soil type :** Clay loam. **Years :** 1956 to 1959.

RESULTS :

(i) 931 lb./ac. (ii) 111.9 lb./ac. (iii) Main effects of N, P and K are highly significant. Interaction P×N is significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	794	803	804	652	823	926	800
N_1	913	1023	960	821	965	1109	965
N_2	1000	1047	1039	903	1075	1108	1029
Mean	902	958	934	792	954	1048	931
P_0	787	792	798				
P_1	922	997	945				
P_2	998	1085	1061				

Serial no. : 51. **Block (Dist.) :** Sasaram (Shahabad). **Soil type :** Clay. **Years :** 1956 to 1959.

RESULTS :

(i) 1273 lb./ac. (ii) 108.5 lb./ac. (iii) Main effects of N and P are highly significant. Main effect of K is significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	1071	1130	1146	802	1220	1325	1116
N_1	1260	1327	1325	1097	1309	1506	1304
N_2	1382	1391	1428	1177	1404	1620	1400
Mean	1238	1283	1300	1025	1311	1484	1273
P_0	991	1033	1052				
P_1	1274	1322	1338				
P_2	1448	1492	1511				

Serial no. : 52. **Block (Dist.) :** Shahpur (Shahabad). **Soil type :** Clay. **Years :** 1956, 1958 and 1959.

RESULTS :

(i) 1205 lb /ac. (ii) 87.5 lb./ac. (iii) Main effects of N, P and interaction N×P alone are highly significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	1097	1161	1143	915	1188	1298	1134
N_1	1188	1198	1227	1034	1198	1381	1204
N_2	1270	1307	1252	1243	1261	1326	1277
Mean	1185	1222	1207	1064	1216	1335	1205
P_0	1043	1070	1079				
P_1	1178	1262	1207				
P_2	1334	1335	1336				

Serial no. : 53. **Block (Dist.) :** Sheosagar (Shahabad). **Soil type :** Clay. **Years :** 1958

RESULTS :

(i) 895 lb./ac. (ii) 89.0 lb./ac. (iii) Main effects of N, P and interaction N×P are highly significant. (iv) Av. yield of grain in lb./ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	686	755	768	631	755	823	736
N_1	920	933	918	741	864	1166	924
N_2	1015	1001	1056	809	933	1330	1024
Mean	874	896	914	727	851	1106	895
P_0	699	755	727				
	810	837	905				
P_2	1113	1098	1109				

Crop :- Gram *(Rabi)*. **Ref :- Bh. 59(213).**

Site :- Agri. Res. Instt., Pusa. **Type :- 'C'.**

Object :—To determine the optimum time of sowing and seed rate for Gram.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Loamy. (b) N.A. (iii) As per treatments. (iv) (a) 2 ploughings by mould board plough and 1 by *desi* plough. (b) Behind the plough. (c) As per treatments. (d) Rows 1′ apart. (e) 1 to 2. (v) 40 lb./ac. of P_2O_5 as Super. (vi) Improved. (vii) Nil. (viii) 1 hand weeding. (ix) 18.57″. (x) 20 to 24.3.1960.

2. TREATMENTS :

Main-plot treatments :

6 dates of sowing : D_1=1.10.1959, D_2=15.10.1959, D_3=30.10.1959, D_4=15.11.1959, D_5=30.11.1959 and D_6=15.12.1959.

Sub-plot treatments :

4 seed rates : S_1=15, S_2=20, S_3=25 and S_4=30 srs./ac.

3. DESIGN :

(i) Split-plot. (ii) (a) 6 main-plots/block ; 4 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a) 25′×16′. (b) 24′×14′. (v) 12″×6″. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1959—N.A. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 265 lb./ac. (ii) (a) 340.7 lb /ac (b) 91.2 lb./ac. (iii) Main effect of D alone is highly significant. (iv) Av. yield of grain in lb./ac.

	D_1	D_2	D_3	D_4	D_5	D_6	Mean
S_1	489	578	556	44	22	100	298
S_2	422	567	422	67	39	33	258
S_3	378	422	467	72	33	28	233
S_4	489	511	533	56	17	22	271
Mean	444	519	494	60	28	46	265

S.E. of difference of two
1. D marginal means = 139.1 lb./ac.
2. S marginal means = 30.4 lb./ac.
3. S means at the same level of D = 74.5 lb./ac.
4. D means at the same level of S = 153.3 lb./ac.

Crop :- Gram ***(Rabi).*** **Ref :- Bh. 58(159).**
Site :- Agri. Res. Instt., Sabour. **Type :- 'C'.**

Object :—To determine the optimum time of sowing and seed rate for Gram.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) and (b) N.A. (iii) As per treatments. (iv) (a) 4 ploughings. (b) Behind the plough. (c) As per treatments. (d) Row to row 1′. (e) —. (v) 40 lb /ac. of P_2O_5 as Super. (vi) ST—4. (vii) Irrigated. (viii) 1 weeding and hoeing. (ix) 8.36″. (x) 20.3.1959 and 10.4.1959.

2. TREATMENTS :

Same as in expt no. 59(213) on page 643.

3. DESIGN :

(i) Split-plot. (ii) (a) 6 main-plots/block, 4 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a) 30′×23′. (b) 29′×22′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) and (b) N.A. (iii) Grain yield. (iv) (a) 1958—N.A. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 929 lb./ac. (ii) (a) 283.9 lb./ac. (b) 153.0 lb./ac. (iii) Main effect of D alone is highly significant. (iv) Av. yield of grain in lb./ac.

	D_1	D_2	D_3	D_4	D_5	D_6	Mean
S_1	1229	1036	904	1115	711	527	920
S_2	1142	1159	1203	1142	597	580	971
S_3	948	1001	1106	1027	861	378	887
S_4	983	1335	1036	1001	825	439	937
Mean	1076	1133	1062	1071	749	481	929

S.E. of the difference of two

1. D marginal means	=	115.9 lb./ac.
2. S marginal means	=	51.0 lb./ac.
3. S means at the same level of D	=	124.9 lb./ac.
4. D means at the same level of S	=	158.5 lb./ac.

Crop :- Gram *(Rabi)*. **Ref :- Bh. 59(88).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'C'.**

Object :—To determine the optimum time of sowing and seed rate for Gram.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) and (b) N.A. (iii) As per treatments. (iv) (a) 3 ploughings. (b) Behind the plough. (c) As per treatments. (d) Row to row 1′. (e) —. (v) 40 lb./ac. of P_2O_5 as Super at sowing in furrows. (vi) ST—4. (vii) Irrigated. (viii) 1 weeding and hoeing. (ix) 8.10″. (x) 25.3.1960 and 8.4.1960.

2 TREATMENTS :

Main-plot treatments :

5 dates of sowing : D_1=15.10.1959, D_2=30.10.1959, D_3=15.11.1959, D_4=30.11.1959 and D_5= 15.12.1959.

Sub-plot treatments :

4 seeds rates : S_1=15, S_2=20, S_3=25 and S_4=30 srs./ac.

3. DESIGN :

(i) Split-plot. (ii) (a) 5 main-plots/block ; 4 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a) N.A. (b) 15′×36′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Grain yield. (iv) (a) 1958—N.A. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 841 lb./ac. (ii) (a) 268.1 lb./ac. (b) 140.9 lb./ac. (iii) Main effect of D alone is highly significant. (iv) Av. yield of grain in lb./ac.

	D_1	D_2	D_3	D_4	D_5	Mean
S_1	1493	1562	671	107	204	807
S_2	1479	1604	968	242	76	874
S_3	1493	1231	898	256	97	795
S_4	1521	1521	1051	207	138	888
Mean	1497	1480	897	203	129	841

S.E. of difference of two

1. D marginal means	=	109.5 lb./ac.
2. S marginal means	=	72.8 lb./ac.
3. S means at the same level of D	=	114.5 lb./ac.
4. D means at the same level of S	=	148.0 lb./ac.

Crop :- Gram *(Rabi)*. **Ref :- Bh. 59(38).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'D'.**

Object :—To assess the effect of soaking seeds in hormones on growth, vigour and grain yield of Gram.

1. BASAL CONDITIONS:

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Sandy reddish (lateritic soil). (b) Refer soil analysis, Kanke. (iii) 29.10.1959. (iv) (a) 2 ploughings. (b) Line sowing. (c) N.A. (d) 1′×1′. (e) 3. (v) 20 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super at sowing. (vi) ST—4. (vii) Irrigated. (viii) 1 weeding (ix) 1.5″. (x) 13.4.1960.

2. TREATMENTS :

All combinations of (1), (2) and (3)+2 extra treatments.

(1) 3 hormones : H_1=I.A.A., H_2=N.A.A. and H_3=2—4—D.
(2) 2 concentrations : C_1=5 ppm and C_2=15 ppm.
(3) 2 durations of soaking : D_1=6 and D_2=12 hours.

Extra treatments : T_1=Soaking in water for 6 hours and T_2=Soaking in water for 12 hours.

3. DESIGN :

(i) R.B.D. (ii) (a) 14. (b) N.A. (iii) 4. (iv) (a) 10′×10′. (b) 9′×9′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) N.A. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 736 lb./ac. (ii) 255.3 lb./ac. (iii) Main effect of D is highly significant. Effect of H and no hormone *vs.* hormones are significant. (iv) Av. yield of grain in lb./ac.

T_1 = 910 lb./ac. and T_2 = 1008 lb./ac.

	H_1	H_2	H_3	Mean	D_1	D_2
C_1	692	768	539	666	820	513
C_2	702	862	625	730	861	599
Mean	697	815	582	698	840	556
D_1	781	922	818			
D_2	614	708	346			

S.E. of H marginal mean = 63.8 lb./ac.
S.E. of C or D marginal mean = 52.1 lb./ac.
S.E. of body of C×H or D×H table = 90.2 lb./ac.
S.E. of body of C×D table = 73.7 lb./ac.
S.E. of T_1 or T_2 mean = 127.7 lb./ac.

Crop :- Gram. **Ref :- Bh. 55(62).**

Site :- Bot. Sub-Stn., Monghyr. **Type :- 'D'.**

Object :—To study the effect of root nodule bacterial inoculation on the yield of Gram.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Kalai* and *Jowar* as fodder. (c) Nil. (ii) (a) Loam. (b) N.A. (iii) 10.11.1955. (iv) (a) 3 ploughings. (b) Sown behind the plough. (c) 40 srs./ac. (d) Row to row 1′. (e) N.A. (v) Nil. (vi) BR—2 (early). (vii) Unirrigated. (viii) Two weedings. (ix) 1.26″. (x) 19.3.1956.

2. TREATMENTS :

3 bacterial inoculation treatments : T_0=Control, T_1=Seed inoculation and T_2=Soil inoculation.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 5. (iv) (a) and (b) 22′×25′. (v) 2′. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Germination, growth, flowering date and yield of grain. (iv) (a) 1953—N.A. (b) No. (c) Nil. (v) (a) All botanical sub-stations. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 673 lb./ac. (ii) 133.7 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_0	T_1	T_2
Av. yield	660	678	682

S.E./mean = 59.8 lb./ac.

Crop :- Gram *(Rabi)*. **Ref :- Bh. 57(209).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'D'.**

Object :—To test the effect of using insecticides on micro-biological activities of soil and the crop yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Maize. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 27.10.1957. (iv) (a) 3 spadings, 1 spading more at sowing time. (b) Line sowing. (c) 30 srs./ac. (d) Rows 1′ apart. (e) 1 to 2. (v) Nil. (vi) BR—77. (vii) Irrigated. (viii) 1 *khurpi* operation. (ix) 0.06″. (x) 12.3.1958.

2. TREATMENTS :

All combinations of (1) and (2)+one control.

(1) 3 insecticides : S_1=B.H.C., S_2=Aldrin and S_3=D.D.T.

(2) 2 levels of insecticides : L_1=30 and L_2=60 lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) 14′×11′. (b) 12′×9′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Grain yield. (iv) (a) 1957—1959. (b) and (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 2171 lb./ac. (ii) 211.5 lb./ac. (iii) No effect is significant. (iv) Av. yield of grain in lb./ac.

Control = 2119 lb./ac.

	S_1	S_2	S_3	Mean
L_1	2119	2087	2236	2147
L_2	2275	2169	2191	2212
Mean	2197	2128	2213	2179

S.E. of S marginal mean = 74.8 lb./ac.

S.E. of L marginal mean = 61.1 lb./ac.

S.E. of body of table or control mean = 105.7 lb./ac.

Crop :- Gram *(Rabi)*. **Ref :- Bh. 58(226).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'D'.**

Object :—To test the effect of using insecticides on micro-biological activities of soil and the crop yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Maize. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 1.11.1958. (iv) (a) 3 spadings. (b) Line sowing by spade. (c) 30 srs./ac. (d) Rows 1′ apart. (e) —. (v) Nil. (vi) ST—4. (vii) Irrigated. (viii) Weeding once by *khurpi*. (ix) 4.03″. (x) 29.3.1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 57(209) on page 647.

5. RESULTS :

(i) 2122 lb./ac. (ii) 245.8 lb./ac. (iii) Main effect of L alone is highly significant. (iv) Av. yield of grain in lb./ac.

Control = 2320 lb./ac.

	S_1	S_2	S_3	Mean
L_1	1646	2139	2035	1940
L_2	2204	2333	2178	2238
Mean	1925	2236	2107	2089

S.E. of S marginal mean = 86.9 lb./ac.
S.E. of L marginal mean = 71.0 lb./ac.
S.E. of body of table or control mean = 122.9 lb./ac.

Crop :- Gram *(Rabi)*. **Ref :- Bh. 59(162).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'D'.**

Object :—To test the effect of using insecticides on micro-biological activities of soil and the crop yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Maize. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 4.11.1959. (iv) (a) 3 spadings. (b) Line sowing. (c) 30 srs./ac. (d) Rows 1′ apart. (e) —. (v) Nil. (vi) ST—4. (vii) Irrigated. (viii) N.A. (ix) 1.49″. (x) 20.3.1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 57(209) on page 647.

5. RESULTS :

(i) 1789 lb./ac. (ii) 335.7 lb./ac. (iii) No effect is significant. (iv) Av. yield of grain in lb./ac.

Control = 1879 lb./ac.

	S_1	S_2	S_3	Mean
L_1	1620	1802	1827	1750
L_2	2048	1646	1698	1797
Mean	1834	1724	1763	1774

S.E. of S marginal mean = 118.7 lb./ac.
S.E. of L marginal mean = 96.9 lb./ac.
S.E. of body of table or control mean = 167.9 lb./ac.

Crop :- Gram *(Rabi)*. **Ref :- Bh. 55(233).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'D'.**

Object :—To study the effect of seed and soil inoculation with root nodules bacteria on crop yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 30.11.1955. (iv) (a) 3 spadings. (b) Line sowing. (c) 35 lb /ac. (d) Row to row 1′. (e) N.A. (v) and (vi) N.A. (vii) Irrigated. (viii) 2 weedings. (ix) 0.84″. (x) 26.3.1956.

2. TREATMENTS :

4 inoculation treatments : T_0=Control, T_1=Seed inoculation with its organism, T_2=Soil inoculation with its organism and T_3=Cross inoculation with lucerne culture.

3. DESIGN :

(i) R B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) 14′×11′. (b) 12′×9′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Grain yield. (iv) (a) to (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 437 lb./ac. (ii) 119.2 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_0	T_1	T_2	T_3
Av. yield	570	376	518	285

S.E./mean = 59.6 lb./ac.

Crop :- Gram *(Rabi)*. **Ref :- Bh. 57(35).**

Site :- Agri. Res. Instt., Patna. **Type :- 'DM'.**

Object :—To test the effect of seed inoculation with root nodule bacteria with and without phosphate and molybdenum on Gram yield.

1. BASAL CONDITIONS

(i) (a) Nil. (b) *Jowar*. (c) N.A. (ii) Heavy clay. (b) Refer soil analysis, Patna. (iii) 13.11.1957. (iv) (a) 3 ploughings. (b) Behind the plough. (c) 20 srs /ac. (d) 12″×8″. (e) —. (v) Nil (vi) ST—4. (vii) Unirrigated. (viii) Weeding. (ix) 1.16″. (x) 18, 19.3.1958.

2. TREATMENTS :

All combinations of (1) and (2).

(1) 3 manurial treatments : M_0=Control, M_1=40 lb./ac. of P_2O_5 as Super and M_2=2 lb./ac. of Molybdenum.

(2) 2 seed treatments : T_0=Control and T_1=seed inoculated.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 32′×19½′. (b)30′ 3″×18′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) No lodging. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1957—N.A. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1165 lb./ac. (ii) 196.6 lb./ac. (iii) No effect is significant. (iv) Av. yield of grain in lb./ac.

	M_0	M_1	M_2	Mean
T_0	1077	1093	1122	1097
T_1	1253	1332	1116	1234
Mean	1165	1212	1119	1165

S.E. of M marginal mean = 69 5 lb./ac.
S.E. of T marginal mean = 56.8 lb./ac.
S.E. of body of the table = 98.3 lb./ac.

Crop :- Gram *(Rabi)*. **Ref :- Bh. 58(147).**

Site :- Agri Res. Instt., Patna. **Type :- 'DM'.**

Object :—To test the effect of seed inoculation with root nodule bacteria with and without phosphate and molybdenum on Gram yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) N.A. (ii) (a) Heavy clay. (b) Refer soil analysis, Patna. (iii) 5, 6.12.1958. (iv) (a) 2 ploughings. (b) Behind the plough. (c) 25 srs./ac. (d) Rows 1′ apart. (e) N.A. (v) Nil. (vi) ST—4. (vii) Unirrigated. (viii) Nil. (ix) 2.95″. (x) 8.4.1959.

2. TREATMENTS :

Same as in expt. no. 57(35) on page 649.

3. DESIGN :

(i) Fact. in R.B D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 24′×27′. (b) 22′6″×25′. (v) 9″×12″. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Grain and straw yield. (iv) (a) to (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 465 lb /ac. (ii) 97.9 lb./ac. (iii) No effect is significant. (iv) Av. yield of grain in lb./ac.

	M_0	M_1	M_2	Mean
T_0	508	436	523	489
T_1	411	450	460	440
Mean	460	443	491	465

S E. of M marginal mean = 34.6 lb./ac.
S.E. of T marginal mean = 28.3 lb./ac.
S.E. of body of table = 48.9 lb./ac.

Crop :- Gram *(Rabi)*. **Ref :- Bh. 56(203).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'DM'.**

Object :—To test the effect of seed inoculation with root nodule bacteria with and without phosphate and molybdenum on Gram yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Kalai.* (c) N.A. (ii) Sandy loam. (b) N.A. (iii) 30.11.1956. (iv) (a) 3 spadings. (b) Line sowing. (c) 30 srs./ac. (d) Row to row 1′. (e) N.A. (v) N.A. (vi) BR—68. (vii) Irrigated. (viii) N A. (ix) 5.32″. (x) 29.3.1957.

2. TREATMENTS :

Same as in expt. no. 57(35) on page 649.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 3. (iv) (a) 14′×11′. (b) 12′×9′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1956—N.A. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) Heavy rains in January 1957. (vii) Nil.

5. RESULTS :

(i) 1515 lb./ac. (ii) 554.9 lb./ac. (iii) No effect is significant. (iv) Av. yield of grain in lb./ac.

	M_0	M_1	M_2	Mean
T_0	1746	1095	1729	1523
T_1	1746	1437	1335	1506
Mean	1746	1266	1532	1515

S.E. of M marginal mean = 226.6 lb./ac.
S.E. of T marginal mean = 185.0 lb./ac.
S.E. of body of table = 320.4 lb./ac.

Crop :- Gram *(Rabi).* **Ref :- Bh. 57(206).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'DM'.**

Object :—To test the effect of seed inoculation with root nodule bacteria with and without phosphate and molybdenum on Gram yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Kalai.* (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 26.10.1957. (iv) (a) 3 spadings, 1 more at time of sowing. (b) Line sowing. (c) 30 srs./ac. (d) Rows 1′ apart. (e) 1 to 2. (v) Nil. (vi) BR—77. (vii) Irrigated. (viii) 3 weedings by *khurpi.* (ix) 0.06″. (x) 12.3.1958.

2. TREATMENTS :

Same as in expt. no. 57(35) on page 649.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 3. (iv) (a) 14′×11′. (b) 12′×9′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Grain yield. (iv) (a) 1956—N.A. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1517 lb./ac. (ii) 354.6 lb./ac. (iii) No effect is significant. (iv) Av. yield of grain in lb./ac.

	M_0	M_1	M_2	Mean
T_0	1694	1331	1642	1556
T_1	1297	1685	1452	1478
Mean	1495	1508	1547	1517

S.E. of M marginal mean = 144.8 lb./ac.
S.E. of T marginal mean = 118.2 lb./ac.
S.E. of body of table = 204.7 lb./ac.

Crop :- Gram *(Rabi).* **Ref :- Bh. 58(224).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'DM'.**

Object :—To test the effect of seed inoculation with root nodule bacteria with and without phosphate and molybdenum on Gram yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Kalai* (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 6.11.1958. (iv) (a) 3 times spading. (b) Line sowing. (c) 30 srs./ac. (d) Row to row 1′. (e) N.A. (v) Nil. (vi) ST—4. (vii) N.A. (viii) 1 weeding. (ix) 4.03″. (x) 1.4.1959.

2. TREATMENTS :

Same as in expt. no. 57(35) on page 649.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 3. (iv) (a) 14′×11′. (b) 12′×9′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) N.A. (iii) Grain yield. (iv) (a) 1956. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1391 lb./ac. (ii) 453.4 lb./ac. (iii) No effect is significant. (iv) Av. yield of grain in lb./ac.

	M_0	M_1	M_2	Mean
T_0	1556	950	1418	1308
T_1	1331	1470	1625	1575
Mean	1443	1210	1521	1391

S.E. of M marginal mean = 185.1 lb./ac.
S.E. of T marginal mean = 151.1 lb./ac.
S.E. of body of the table = 261.8 lb./ac.

Crop :- Gram *(Rabi)*. **Ref :- Bh. 56(206).**

Site :- Agri. Res. Inst., Sabour. **Type :- 'DM'.**

Object :—To test the effect of using insecticides on microbiological activities of soil and Gram yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Jowar*. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 13.11.1956. (iv) (a) 3 spadings. (b) Line sowing. (c) 35 lb./ac. (d) Row to row 1′. (e) N.A. (v) Nil. (vi) Local. (vii) Irrigated. (viii) 2 weedings. (ix) 6.64″. (x) 20.4.1957.

2. TREATMENTS :

Same as in expt. no. 57(209) on page 647.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) 14′×11′. (b) 12′×9′. (v) 1′×1′. (vi) Yes.

4. GENERAL.

(i) Fair. (ii) Nil. (iii) Grain and straw yield. (iv) (a) 1956—N.A. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 2900 lb./ac. (ii) 367.8 lb./ac. (iii) No effect is significant. (iv) Av. yield of grain in lb./ac.

Control = 2982 lb./ac.

	S_1	S_2	S_3	Mean
L_1	3059	2917	2930	2969
L_2	2723	2930	2761	2805
Mean	2891	2923	2845	2887

S.E. of S marginal mean = 130.0 lb./ac.
S.E. of L marginal mean = 106.2 lb./ac.
S.E. of body of table = 183.9 lb./ac.

Crop :- Khesari *(Rabi)*. **Ref :- Bh. 55(234).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'D'.**

Object :—To study the effect of seed and soil inoculation with root nodule bacteria on Khesari yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 8.12.1955. (iv) (a) 3 spadings. (b) Line sowing. (c) 3 cz./ac. (d) 1′×1′. (e) N.A. (v) and (vi) N.A. (vii) Irrigated. (viii) 3 weedings. (ix) 0 84″. (x) 26.3.1956.

2. TREATMENTS :

1. Control.
2. Seed inoculation with its organism.
3. Soil inoculation with its organism.
4. Cross inoculation with lucerne culture.

3. DESIGN :

(i) R.B D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) 14′×11′. (b) 12′×9′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Yield of *khesari*. (iv) (a) 1955—N.A. (b) No. (c) Nil. (v) to (vii) N.A.

5. RESULTS :

(i) 162 lb /ac. (ii) 101.2 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of *khesari* in lb./ac.

Treatment	1	2	3	4
Av. yield	272	65	285	26

S.E./mean = 50.6 lb./ac.

Crop :- Khesari *(Rabi)*. **Ref :- Bh. 56(201).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'DM'.**

Object :—To see the effect of seed inoculation with root nodule bacteria with and without phosphate and molybdenum on Khesari yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Soybean. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 30.11.1956. (iv) (a) 3 spadings. (b) line sowing. (c) 75.6 lb./ac. (d) Rows 1′ apart. (e) N.A. (v) N.A. (vi) Local. (vii) Irrigated. (viii) N.A. (ix) 5.32″. (x) 29.3.1957.

2. TREATMENTS :

6 seed-inoculations : T_0=Control, T_1=Seed inoculation, T_2=40 lb./ac. of P_2O_5 as Super, $T_3=T_1+T_2$, T_4=2 lb./ac. of Molybdenum and $T_5=T_1+T_4$.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 3. (iv) (a) 14′×11′. (b) 12′×9′, (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1956—N.A. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 228 lb./ac. (ii) 57.3 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of *khesari* in lb./ac.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5
Av. yield	277	207	173	207	242	259

S.E./mean = 33.1 lb./ac.

Crop :- Khesari *(Rabi)*. **Ref :- Bh. 57(207).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'DM'.**

Object :—To test the effect of seed inoculation with root nodule bacteria with and without phosphate and molybdenum on Khesari yield.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 11.12.1957. (iv) (a) 3 spadings. (b) Line sowing. (c) N.A. (d) Rows 1′ apart. (e) —. (v) Nil. (vi) Local. (vii) Irrigated. (viii) 2 *khurpi* operations for earthing up. (ix) 0.06″. (x) 22.3.1958.

2. TREATMENTS :

6 seed-inoculations : T_0=Control (no inoculation and no P_2O_5), T_1=Seed inoculation, T_2=40 lb./ac. of P_2O_5 as Super, $T_3=T_1+T_2$, T_4=2 lb./ac. of Ammonium Molybdate, $T_5=T_1+T_4$ Super and Molybdate applied at sowing.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 3. (iv) (a) 14′×11′. (b) 12′×9′. (v) 1′ alround. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Grain yield. (iv) (a) 1957—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1499 lb./ac. (ii) 357.9 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of *khesar* in lb./ac.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5
Av. yield	1753	1313	1460	1469	1495	1504

S.E./mean = 206.6 lb./ac.

Crop : Khesari *(Rabi)*. **Ref :- Bh. 58(225).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'DM'.**

Object :—To test the effect of seed inoculation with root nodule bacteria with and without phosphate and molybdenum on Khesari yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Soybean. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 5.12.1958. (iv) (a) 3 spadings. (b) Line sowing. (c) 30 srs./ac. (d) Row to row 1′. (e) N.A. (v) Nil. (vi) Local. (vii) Irrigated. (viii) Nil. (ix) 4.03″. (x) 22.3.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 57(207) above.

4. GENERAL :

(i) and (ii) N.A. (iii) Grain yield. (iv) (a) 1957—contd. (b) No. (c) Nil. (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 121 lb./ac. (ii) 58.8 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of *kheseri* in lb./ac.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5
Av. yield	130	130	147	138	95	86

S.E./mean = 33.9 lb./ac.

Crop :- Kalai *(Kharif).* **Ref :- Bh. 59(116).**

Site :- Soil Conservation Res. Stn., Jalalgarh. **Type :- 'M'.**

Object :—To study the effect of trace elements on yield of Kalai.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 23.8.1959. (iv) (a) 4 ploughings. (b) Line sowing. (c) 8 srs./ac. (d) Row to row 10″. (e) N.A. (v) Nil. (vi) Local. (vii) Unirrigated. (viii) 1 weeding and hoeing. (ix) N.A. (x) 1.12.1959.

2. TREATMENTS:

14 treatments : T_0=Control, T_1=10 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super+40 lb./ac. of K_2O as Mur. Pot., $T_2=T_1+10$ lb./ac. of $MnSO_4$, $T_3=T_1+20$ lb./ac. of $MnSO_4$, $T_4=T_1+$ 10 lb./ac. of $ZnSO_4$, $T_5=T_1+20$ lb./ac. of $ZnSO_4$, $T_6=T_1+10$ lb./ac. of Borax, $T_7=T_1+$ 20 lb./ac. of Borax, $T_8=T_1+20$ lb./ac. of $CuSO_4$, $T_9=T_1+20$ lb./ac. of $CuSO_4$, $T_{10}=T_1+$ 10 lb./ac. of $FeSO_4$, $T_{11}=T_1+20$ lb./ac. of $FeSO_4$, $T_{12}=T_1+1$ lb./ac. of Mo as Sodium Molybdate and $T_{13}=T_1+2$ lb./ac. of Mo as Sodium Molybdate.

3. DESIGN :

(i) R.B.D. (ii) (a) 14. (b) N.A. (iii) 4. (iv) (a) 35.5′×17′. (b) 34′×16′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Caterpiller attack—dusting with Folidol. (iii) Grain yield. (iv) (a) 1959—N.A. (b) and (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1045 lb./ac. (ii) 275.0 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	977	1214	1049	1152	926	895	1059
Treatment	T_7	T_8	T_9	T_{10}	T_{11}	T_{12}	T_{13}
Av. yield	967	1100	926	946	1244	1152	1029

S.E./mean = 137.5 lb./ac.

Crop :- Kalai *(Kharif).* **Ref :- Bh. 58, 59(5).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'M'.**

Object :—To study the effect of N, P, K and lime on Kalai crop.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Red Laterite. (b) Refer soil analysis, Kanke. (iii) Last week of July. (iv) (a) 4 ploughings with *desi* plough. (b) Line sowing. (c) N.A. (d) 1′ between rows. (e) N.A. (v) N.A. (vi) Local. (vii) Unirrigated. (viii) Hoeing and weeding. (ix) and (x) N.A.

2. TREATMENTS :

1. Control (no manure).
2. 3600 lb./ac. of lime.
3. 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super+40 lb./ac. of K_2O as Mur. Pot.
4. Treatment 3+3600 lb./ac. of lime.

Lime applied in 1958 only. Residual effect studied in subsequent years.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) 14′×20′. (b) 12′×18′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) *Cercospora* attack—Endrine was sprayed. (iii) Grain yield. (iv) (a) 1958—1960. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

1958.

(i) 495.7 lb./ac. (ii) 77.6 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	1.	2.	3.	4.
Av. yield	296.2	584.1	510.1	592.4

S.E. mean = 34.7 lb./ac.

1959.

(i) 257.7 lb./ac. (ii) 66.3 lb /ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	1.	2.	3.	4.
Av. yield	141.5	246.8	331.6	311.0

S.E./mean = 29.6 lb./ac.

Crop :- Kalai *(Kharif)*. **Ref :- Bh. 59(51).**

Site :- Govt. Agri. Farm, Neterhat. **Type :- 'M'.**

Object :—To test the effect of lime on the yield of Kalai.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Red laterite. (b) N.A. (iii) 12, 13.7.1959. (iv) (a) 5 ploughings. (b) Broadcast. (c) to (e) N.A. (v) Nil. (vi) Local. (vii) Unirrigated. (viii) 2 hoeings and 2 weedings. (ix) 36.36″ (x) 24.10.1959.

2. TREATMENTS :

4 manurial treatments : M_0=Control, M_1=3600 lb./ac. of lime, M_2=40 lb./ac. of N as urea+40 lb./ac. of P_2O_5 as Super+40 lb./ac. of K_2O as Mur. Pot., and $M_3=M_2+3600$ lb./ac. of lime.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) N.A. (b) 1/80 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) Nil. (iii) Grain yield. (iv) (a) to (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 87.2 lb./ac. (ii) 8.76 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3
Av. yield	16.5	73.0	63.8	195.4

S.E./mean = 3.92 lb./ac.

Crop :- Kalai. *(Kharif)*. **Ref :- Bh. 58(219).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :— To test the effect of trace elements on the yield of Kalai.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Wheat. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 12.7.1958. (iv) (a) 3 spadings. (b) Line sowing. (c) 50.4 lb./ac. (d) Rows 1′ apart. (e) N.A. (v) Nil. (vi) Local. (vii) Unirrigated. (viii) One weeding by *khurpi* on 13.8.1958. (ix) 25.89″. (x) 17.10.1958.

2. TREATMENTS :

14 trace element treatments : T_0=Control, T_1=10 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super+40 lb./ac. of K_2O as Mur. Pot., $T_2=T_1+20$ lb./ac. of $MnSO_4$, $T_3=T_1+20$ lb./ac. of $MnSO_4$, $T_4=T_1+10$ lb./ac. of $ZnSO_4$. $T_5=T_1+20$ lb /ac. of $ZnSO_4$, $T_6=T_1+10$ lb./ac. of Borax, $T_7=T_1+20$ lb./ac. of Borax, $T_8=T_1+10$ lb./ac. of $CuSO_4$, $T_9=T_1+20$ lb./ac. of $CuSO_4$, $T_{10}=T_1+10$ lb./ac. of $FeSO_4$, $T_{11}=T_1+20$ lb./ac. of $FeSO_4$, $T_{12}=T_1+1$ lb./ac. of Molybdenum and $T_{13}=T_1+2$ lb./ac. of Molvbdenum.

3. DESIGN :

(i) R.B.D. (ii) (a) 14. (b) N.A. (iii) 4. (iv) (a) 14′×11′. (b) 12′×9′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) to (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 198 lb./ac. (ii) 30.0 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	176.6	187.6	215.6	231.8	209.8	208.7	216.2

Treatment	T_7	T_8	T_9	T_{10}	T_{11}	T_{12}	T_{13}
Av. yield	171.5	187.7	199.9	167.0	215.2	200.5	183.6

S.E./mean = 15.0 lb./ac.

Crop :- Kalai *(Kharif)*. **Ref :- Bh. 59(165).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To test the effect of trace elements on Kalai yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Wheat. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 17.8.1959. (iv) (a) 3 spadings. (b) Line sowing. (c) 50.4 lb./ac. (d) Lines 1′ apart. (e) N.A. (v) Nil. (vi) BR—68. (vii) Irrigated. (viii) Nil. (ix) 21.84″. (x) 19.11.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 58(219) on page 656.

4. GENERAL :

(i) and (ii) N.A. (iii) Grain yield. (iv) (a) 1959—N.A. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 130.0 lb./ac. (ii) 97.1 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	71.6	116.8	71.6	252.6	135.8	45.3	148.9

Treatment	T_7	T_8	T_9	T_{10}	T_{11}	T_{12}	T_{13}
Av. yield	83.9	65.0	135.8	110.3	116.8	58.4	168.7

S.E./mean = 48.6 lb./ac.

Crop :- Kalai *(Kharif)*. **Ref :- Bh. 59(152).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To test the effect of trace elements on the yield of Kalai.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 24.8.1959. (iv) (a) 3 ploughings and one cross ploughing all with *desi* plough. (b) Line sowing. (c) 15 srs./ac. (d) Rows 1½′ apart. (e) N.A. (v) Nil. (vi) BR—68 (medium). (vii) Unirrigated. (viii) One weeding by *khurpī*. (ix) 25.75″. (x) 22.11.1959.

2. TREATMENTS :

14 trace elements treatments : T_0=Control, T_1=10 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super+40 lb./ac. of K_2O as Mur. Pot., $T_2=T_1$+10 lb./ac. of $MnSO_4$, $T_3=T_1$+20 lb./ac. of $MnSO_4$, $T_4=T_1$+10 lb./ac. of $ZnSO_4$, $T_5=T_1$+20 lb./ac. of $ZnSO_4$, $T_6=T_1$+10 lb./ac. of Borax, $T_7=T_1$+20 lb./ac. of Borax, $T_8=T_1$+10 lb./ac. of $CuSO_4$, T_9=20 lb./ac. of $CuSO_4$, $T_{10}=T_1$+10 lb./ac. of $FeSO_4$, $T_{11}=T_1$+20 lb./ac. of $FeSO_4$, $T_{12}=T_1$+1 lb./ac. of Mo as Ammonium Molybdate and $T_{13}=T_1$+2 lb./ac of Mo as Ammonium Molybdate.

3. DESIGN :

(i) R.B.D. (ii) (a) 14. (b) N.A. (iii) 4. (iv) (a) 35′×19′. (b) 33′×16′16″. (v) 12″×15″. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Grain yield. (iv) and (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 298 lb./ac. (ii) 84.0 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	288	244	295	272	365	226	283

Treatment	T_7	T_8	T_9	T_{10}	T_{11}	T_{12}	T_{13}
Av. yield	283	360	286	332	288	288	360

S.E./mean = 42.0 lb./ac.

Crop :- Kalai (*Kharif*). **Ref :- Bh. 56(108).**

Site :- Bot. Sub-Stn., Sepaya. **Type :- 'M'.**

Object :—To test the effect of trace elements on the yield of Kalai.

1. BASAL CONDITIONS :

(i) (a) Fallow—*Kalai*—Fallow. (b) Fallow. (c)—. (ii) (a) Clayey loam. (b) N.A. (iii) 20.7.1956. (iv) (a) 3 ploughings by Bihar plough. (b) Behind the plough. (c) 8 srs./ac. (d) Rows 1′ apart. (e) —. (v) Nil. (vi) BR—68. (vii) Unirrigated. (viii) One hoeing and one weeding. (ix) 47.00″. (x) 21.12.1956.

2. TREATMENTS :

Same as in expt. no. 59(152) on page 657.

3. DESIGN :

(i) R.B.D. (ii) (a) 14. (b) N A. (iii) 5. (iv) (a) and (b) 27′×8′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) Nil. (iii) Yield of grain. (iv) (a) 1956—1958. (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) Crop was poor due to heavy rains. (vii) Nil.

5. RESULTS :

(i) 226 lb./ac. (ii) 103.1 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	176	254	218	213	275	254	316

Treatment	T_7	T_8	T_9	T_{10}	T_{11}	T_{12}	T_{13}
Av. yield	150	176	238	264	197	202	233

S.E./mean = 46.1 lb./ac.

Crop :- Kalai *(Kharif)*. **Ref :- Bh. 57(126)**

Site :- Bot. Sub-Stn., Sepaya. **Type :- 'M'.**

Object :—To test the effect of trace elements on the yield of Kalai crop.

1. BASAL CONDITIONS :

(i) (a) *Kalai*—Fallow—*Kalai*. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 28.6.1957. (iv) (a) 2 ploughings by Bihar plough. (b) Behind the plough. (c) 8 srs./ac. (d) Rows 1′ apart. (e) N.A. (v) Nil. (vi) BR—68. (vii) Unirrigated. (viii) One weeding by *khurpi*. (ix) 32.97″. (x) 20.10.1957.

2. TREATMENTS :

Same as in expt. no. 59(152) on page 657.

3. DESIGN :

(i) R.B.D. (ii) (a) 14. (b) N.A. (iii) 5. (iv) (a) 30′×10′. (b) 27′×8′. (v) 1′×1½′. (vi) Yes.

4. GENERAL :

(i) Very poor. (ii) Nil. (iii) Grain yield. (iv) (a) 1956—1958. (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 77 lb./ac. (ii) 38.1 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	42	57	73	78	207	259	31

Treatment	T_7	T_8	T_9	T_{10}	T_{11}	T_{12}	T_{13}
Av. yield	52	42	47	26	31	62	67

S.E./mean = 17.0 lb./ac.

Crop :- Kalai *(Kharif)*. **Ref :- Bh. 58(129).**

Site :- Bot. Sub-Stn., Sepaya. **Type :- 'M'.**

Object :—To test the effect of trace elements on the yield of Kalai crop.

1. BASAL CONDITIONS :

(i) (a) *Kalai*—Fallow—*Kalai*. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 25.6.1958. (iv) (a) 2 ploughings by Bihar plough. (b) Behind the plough. (c) N.A. (d) Rows 1′ apart. (e) N.A. (v) Nil. (vi) BR—68. (vii) Unirrigated. (viii) Weeding by *khurpi*. (ix) 49.19″. (x) 18.10.1958.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 57(126) above.

4. GENERAL :

(i) Poor. (ii) White rust was noticed—Gammexane was sprayed. (iii) Grain and straw yield. (iv) (a) 1956—1958. (b) Yes. (c) No. (v) (a) and (b) N.A. (vi) and (vii) Nil.

4. RESULTS :

(i) 294 lb./ac. (ii) 190.7 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	146	294	279	268	489	736	294

Treatment	T_7	T_8	T_9	T_{10}	T_{11}	T_{12}	T_{13}
Av. yield	278	242	263	137	221	221	257

S.E./mean = 85.3 lb./ac.

Crop :- Horse Gram. **Ref :- Bh. 59(SFT).**

Centre :- Monghyr (c.f.). **Type :- 'M'.**

Object :— Type C :—To compare the response of leguminous crops to alternative sources and levels of phosphate.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Alluvial. (iii) Nil. (iv) and (v) N.A. (vi) July 1959. (vii) to (ix) N.A. (x) October—November 1959.

2. TREATMENTS :

0 =Control (no manure).
p_1 =30 lb./ac. of P_2O_5 as Super.
p_2 =60 lb./ac. of P_2O_5 as Super.
p_1' =30 lb./ac. of P_2O_5 as Dical. Phos.
p_2' =60 lb./ac. of P_2O_5 as Dical. Phos.

3. DESIGN :

(i) and (ii) The district has been divided into four agriculturally homogeneous zones and one field assistant posted in each zone. The field assistant conducts the trials in one Revenue circle or thana in the zone and the circle/thana is changed once in two years with in the same zone. Each fiield assistant is required to conduct 31 trials in a year. 8 on *kharif* cereal, 8 on a *rabi* cereal, 8 on cash crops, 4 on an oilseed crop and 3 on a leguminous crop. Half the number of trials conducted are of type A and the other half of type B on crop other than the legumes. The three trials on legumes are of type C. Residual effects of phosphate application are studied on type C trials in two out of the four zones in each district every year. The above experiments are laid out in randomly located fields in randomly selected villages in each of the 4 zones at the rate of one experiment per village. (iii) (a) N.A. (b) 1/80 ac. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain yield. (iv) (a) 1958—contd. (b) No. (c) N.A. (v) As per design. (vi) and (vii) Nil.

5. RESULTS :

Treatment	0	p_1	p_2	p_1'	p_2'
Av. yield	1086	1506	1555	1119	1596

G.M. = 1372 lb./ac. ; S.E. = 140.8 lb./ac. and no. of trials = 3.

Crop : Kalai. **Ref :- Bh. 55(61).**

Site :- Bot. Sub-Stn., Monghyr. **Type :- 'D'.**

Object :—To study the effect of seed inoculation on Kalai yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Gram. (c) Nil. (ii) (a) Loam. (b) N.A. (iii) 5.9.1955. (iv) (a) 3 *desi* ploughings. (b) Behind the plough. (c) 10 srs./ac. (d) 1′ between rows. (e) N.A. (v) Nil. (vi) BR—8 (early). (vii) Unirrigated. (viii) Weeding twice. (ix) 2.51″. (x) 31.12.1955.

2. TREATMENTS :

T_1=*Kalai* seed inoculated with culture obtained from gram root nodule and sown.
T_2=Soil inoculated with culture obtained from *kalai* root nodule and *kalai* seed sown.
T_3=*Kalai* sown without inoculation treatment.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 5. (iv) (a) and (b) 33′×33′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Avrage. (ii) Nil. (iii) Germination, growth, date of flowering, disease incidence and yield of grain. (iv) (a) 1955—N.A. (b) No. (c) Nil. (v) (a) All botanical sub-stations. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 79 lb./ac. (ii) 44.9 lb./ac. (iii) Treatment differences are not significant (iv) Av. yield of grain in lb./ac.

Treatment	T_1	T_2	T_3
Av. yield	85	64	88

S.E./mean = 20.1 lb./ac.

Crop :- Kalai *(Kharif)*. **Ref :- Bh. 58(96).**

Site :- Naya Dumka Farm, Dumka. **Type :- 'DM'.**

Object :—To test the effect of seed inoculation with root nodule bacteria with and without phosphate and molybdenum on K.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Maize and *Rahar*. (c) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy loam. (b) N.A. (iii) 19, 20.7.1958. (iv) (a) 1 tractor ploughing and 2 by *desi* plough. (b) Behind the plough. (c) 10 srs./ac. (d) Row to row 2′. (e) N.A. (v) Nil. (vi) Local. (vii) Unirrigated. (viii) Weeding twice. (ix) 36.34″. (x) 27.11.1958.

2. TREATMENTS :

All combinations of (1) and (2).

(1) 2 methods of inoculation : M_0=Control (no inoculation) and M_1=Seed inoculation.

(2) 4 manurial treatments : T_0=Control (no manure), T_1=40 lb./ac. of P_2O_5 as Super, T_2=2 lb./ac. of Molybdenum and T_3=10 mds./ac. of lime.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 8. (b) N.A. (iii) 5. (iv) (a) 31′×24′. (b) 27′×20′. (v) 2′ alround the plot. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Attack of Jassids on 6.10.1958, spraying of Guesrol with parochloride was done on 15.10.1958. (iii) Grain yield. (iv) (a) 1958—N.A. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS ;

(i) 111 lb./ac. (ii) 33.6 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of grain in lb./ac.

	T_0	T_1	T_2	T_3	Mean
M_0	101	134	132	117	121
M_1	107	99	99	97	101
Mean	104	117	116	107	111

S.E. of M marginal mean = 5.3 lb./ac.
S.E. of T marginal mean = 7.5 lb./ac.
S.E. of body of table = 10.6 lb./ac.

Crop :- Kalai. **Ref :- Bh. 54(53).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'DM'.**

Object :—To test the effect of seed and soil inoculation with root nodules bacteria on Kalai yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy loam. (b) N.A. (ii) 20.7.1954. (iv) (a) Spading twice at an interval of 10 days. (b) In lines. (c) 25.2 lb./ac. (d) Row to row $1\frac{1}{2}'$. (e) N.A. (v) Nil. (vi) Local (late). (vii) Unirrigated. (viii) 2 weedings. (ix) 28.07″. (x) 26.11.1954.

2. TREATMENTS :

T_0=Control, T_1=Seed inoculation, T_2=Soil inoculation, T_3=60 lb /ac. of P_2O_5 as Super, $T_4=T_1+T_3$ and $T_5=T_2+T_3$.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 2. (iv) (a) and (b) 12′×9′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) No. (iii) Grain and straw yield. (iv) (a) 1954—N.A. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 146 lb./ac. (ii) 85.6 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5
Av. yield	110	127	165	169	171	137

S.E./mean = 60.54 lb./ac.

Crop :- Kalai *(Kharif)*. **Ref :- Bh. 56(211).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'DM'.**

Object :—To test the effect of seed inoculation with root nodules bacteria on the yield of Kalai.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 28.7.1956. (iv) (a) 3 spadings. (b) Line sowing. (c) 50.4 lb./ac. (d) Rows 1½′ apart. (e) N.A. (v) Nil. (vi) Local. (vii) Unirrigated. (viii) N.A. (ix) 40.61″. (x) 28.11.1956.

2. TREATMENTS :

T_0=Control, T_1=Seed inoculation, T_2=40 lb./ac. of P_2O_5 as Super, $T_3=T_1+T_2$, T_4=2 lb./ac. of Molybdenum as Ammonium Molybdate and $T_5=T_1+T_4$.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 3. (iv) (a) 14′×11′. (b) 12′×9′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1956—N.A. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 75 lb./ac. (ii) 26.3 lb./ac. (iii) Treatment diffrences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5
Av. yield	86	77	52	52	77	103

S.E./mean = 15.2 lb./ac.

Crop :- Kalai *(Kharif)*. **Ref :-Bh. 58(222).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'DM'.**

Object :—To test the effect of seed inoculation with root nodules bacteria on the yield of Kalai.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Gram. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 15.7.1958. (iv) (a) 3 spadings. (b) Line sowing by spade. (c) 50.4 lb./ac. (d) Rows 1′ apart. (e) N.A. (v) Nil. (vi) Local. (vii) Unirrigated. (viii) Weeding twice by *khurpi*. (ix) and (x) N.A.

2. TREATMENTS :

T_0=Control, T_1=Seed inoculation, T_2=40 lb./ac. of P_2O_5 as Super, $T_3=T_1+T_2$, T_4=2 lb./ac. of Molybdenum and $T_5=T_1+T_4$.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 3. (iv) (a) 14′×11′. (b) 12′×9′. (v) 1′×1′ (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Grain yield. (iv) (a) to (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 17829 lb./ac. (ii) 4129 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5
Av. yield	15072	20724	17889	18736	17768	16783

S.E./mean = 2384 lb./ac.

Crop :- Moong. **Ref :- Bh. 58, 59(7).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'M'.**

Object :—To study the effect of N, P, K and lime on Moong.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Red laterite. (b) Refer soil analysis, Kanke. (iii) Last week of July. (iv) (a) 4 ploughings with *desi* plough. (b) Line sowing. (c) N.A. (d) 1′ between rows. (e) N.A. (v) N.A. (vi) Local. (vii) Unirigated. (viii) Hoeing and weeding. (ix) and (x) N.A.

2. TREATMENTS :

1. Control (no manure).
2. 3600 lb./ac. of lime.
3. 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super+40 lb./ac. of K_2O as Mur. Pot.
4. Treatment 3+3600 lb./ac. of lime.

Lime applied in 1958 only. Residual effect studied in subsequent years.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) 14′×20′. (b) 12′×18′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) *Cercospora* attack—Endrine was sprayed. (iii) Grain yield. (iv) (a) 1958—1960 (b) Yes. (c) Nil. (v) (a) and (b) N A. (vi) and (vii) Nil.

5. RESULTS :

1958

(i) 356 lb./ac. (ii) 88.5 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4
Av. yield	173	346	362	543

S.E./mean = 39.6 lb./ac.

1959

(i) 224 lb./ac. (ii) 56.7 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4
Av. yield	90	180	334	293

S.E./mean = 25.4 lb./ac.

Crop :- Moong. **Ref :- Bh. 55(60).**

Site :- Bot. Sub-Stn., Monghyr. **Type :- 'D'.**

Object :—To study the effect of seed inoculation on Moong yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Rahar+Misrikand*. (c) Nil. (ii) (a) Loam. (b) N.A. (iii) 5.9.1955. (iv) (a) 3 ploughings by *desi* plough. (b) Behind the plough. (c) 10 srs./ac. (d) 1′ between rows. (e) N.A. (v) Nil. (vi) BR—3 (early). (vii) Unirrigated. (viii) 2 weedings. (ix) 3.76″. (x) 1.1.1956.

2. TREATMENTS :

3 methods of inoculation : M_0=Control (no inoculation), M_1=*Moong* seed inoculated with *moong* root nodule, and M_2=Soil inoculated with *moong* root nodule.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 5. (iv) (a) and (b) 33′×33′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Average. (ii) N.A. (iii) Germination, growth, date of flowering, disease incidence and yield of grain. (iv) (a) 1955—N.A. (b) No (c) Nil. (v) (a) All botanical sub-stations. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 375 lb./ac. (ii) 51.8 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_1	M_2	M_3
Av. yield	385	372	368

S.E./mean = 23.2 lb./ac.

Crop :- Moong. **Ref :- Bh. 54(52).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'DM'.**

Object :—To test the effect of seed and soil inoculation with root nodules bacteria with and without phosphate on Moong yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 20.7.1954. (iv) (a) Spading twice at interval of 10 days. (b) Sown in line. (c) 252.6 lb./ac. (d) Row to row 1½′. (e) N.A. (v) Nil. (vi) Local (late). (vii) Unirrigated. (viii) Two weedings at interval of 15 days. (ix) 28.07″. (x) 26.11.1954.

2. TREATMENTS :

T_0=Control, T_1=Seed inoculation, T_2=Soil inoculation, T_3=40 lb./ac. of P_2O_5 as Super, $T_4=T_1+T_3$ and $T_5=T_2+T_3$

P_2O_5 broadcasting at the time of sowing.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 2. (iv) (a) and (b) 12′×9′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Yield of straw and grain. (iv) (a) 1954—N.A. (b) No. (c) Nil. (v) to (vii) Nil.

5 RESULTS :

(i) 77 lb./ac. (ii) 43.2 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5
Av. yield	85	84	73	119	49	48

S.E./mean = 30.5 lb./ac.

Crop :- Moong *(Kharif)*. **Ref :- Bh. 56(210).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'DM'.**

Object :—To see the effect of seed inoculation with root nodules bacteria with and without phosphate and molybdenum on Moong yield.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 28.7.1956. (iv) (a) 3 spadings. (b) Line sowing. (c) 75.6 lb./ac. (d) 1½'×1'. (e) N.A. (v) N.A. (vi) Local. (vii) Unirrigated. (viii) N.A. (ix) 40.61". (x) 28.11.1956.

2. TREATMENTS :

T_0=Control, T_1=Seed inoculation, T_2=40 lb./ac. of P_2O_5 as Super, $T_3=T_1+T_2$, T_4=2 lb./ac. of Molybdenum and $T_5=T_1+T_4$.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 3. (iv) (a) 14'×11'. (b) 12'×9'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1956—N.A. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 35 lb./ac. (ii) 17.3 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5
Av. yield	43	43	26	26	35	35

S.E./mean = 9.98 lb./ac.

Crop :- Moong *(Kharif)*. **Ref :- Bh. 58(216)**

Site :- Agri. Res. Instt., Sabour. **Type :- 'DM'.**

Object :—To test the effect of seed inoculation with root nodules bacteria with and without Phosphate and molybdenum on Moong yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Pea. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 15.7.1958. (iv) (a) 3 spadings. (b) Line sowing. (c) 50.4 lb./ac. (d) Rows 1' apart. (e) N.A. (v) Nil. (vi) Local. (vii) Irrigated. (viii) Twice *khurpi* operation. (ix) 23.72". (x) 5.10.1958.

2. TREATMENTS :

Same as in expt. no. 56(210) above.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 14'×11'. (b) 12'×9'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Grain yield. (iv) (a) to (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 307 lb./ac. (ii) 97.1 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5
Av. yield	272	298	389	324	285	272

S.E./mean = 48.6 lb./ac.

Crop :- Masoor *(Rabi)*. **Ref :- Bh. 58, 59(14).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'M'.**

Object :—To study the effect of N, P, K and lime on Masoor.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Red laterite. (b) Refer soil analysis, Kanke. (iii) Last week of October. (iv) (a) 4 ploughings with *desi* plough. (b) Line sowing. (c) N.A. (d) 10″ between rows. (e) N.A. (v) N.A. (vi) BR—25. (vii) Irrigated. (viii) Hoeing and weeding. (ix) N.A. (x) 1st week of March.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58, 59(7) on page 663.

5. RESULTS :

1958

(i) 216 lb./ac. (ii) 49.6 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4
Av. yield	87	206	180	389

S E./mean = 22.2 lb./ac.

1959

(i) 445 lb /ac. (ii) 91.3 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4
Av. yield	160	324	437	859

S.E./mean = 40.8 lb./ac.

Crop :- Masoor. **Ref :- Bh. 56(199).**

Site :- Agri Res. Instt., Sabour. **Type :- 'DM'.**

Object :—To see the effect of seed inoculation with root nodules bacteria with and without phosphate and molybdenum on Masoor yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 30.11.1956. (iv) (a) 3 spadings. (b) Line sowing. (c) 30 oz./plot. (d) Rows 1′ apart. (e) N.A. (v) N.A. (vi) Local. (vii) Irrigated. (viii) N.A. (ix) 5.32″. (x) 29.3.1957.

2. TREATMENTS :

6 seed inoculations : T_0=Control, T_1=Seed inoculation, T_2=40 lb./ac. of P_2O_5 as Super, $T_3=T_1+T_2$ T_4=2 lb./ac. of Molybdenum as Ammonium Molybdate and $T_5=T_1+T_4$.

3. DESIGN :

(i) R.B D. (ii) (a) 6. (b) N.A. (iii) 3. (iv) (a) 14′×11′. (b) 12′×9′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Grain and straw yield. (iv) 1955—N.A. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 266 lb./ac. (ii) 52.1 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5
Av. yield	311	286	234	251	234	277

S.E./mean = 30.1 lb./ac.

Crop :- Masoor *(Rabi)*. **Ref :- Bh. 55(232).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'DM'.**

Object :—To study the effect of seed and soil inoculation with root nodules bacteria on the yield of Masoor.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 8.12.1955. (iv) (a) 3 spadings. (b) Line sowing. (c) 75.6 lb./ac. (d) and (e) N.A. (v) and (vi) N.A. (vii) Irrigated. (viii) N.A. (ix) 0.84″. (x) 26.3.1956.

2. TREATMENTS :

1. Control.
2. Seed inoculated with culture obtained from *masoor* root nodules.
3. Soil inoculated with culture obtained from *masoor* root nodules.
4. Cross inoculation with lucerne culture.

3. DESIGN :

(i) R.B D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) 14′×11′. (b) 12′×9′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Grain yield. (iv) (a) 1955—N.A. (b) and (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 263 lb./ac. (ii) 179.8 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4
Av. yield	157	324	324	246

S.E./mean = 89.9 lb./ac.

Crop :- Pea *(Rabi)*. **Ref :- Bh. 58, 59(4).**

Site :- Agri. Res. Instt., Kanke. **Type:- 'M'.**

Object :—To study the effect of N, P, K and lime on Pea.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Red laterite. (b) Refer soil analysis, Kanke. (iii) Last week of Oct. (iv) (a) 4 ploughings with *desi* plough. (b) Line sowing. (c) N.A. (d) 1′ between rows. (e) N.A. (v) N.A. (vi) BR—12. (vii) Irrigated. (viii) Hoeing and weeding. (ix) N.A. (x) 1st week of March.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58, 59(7) on page 663.

5. RESULTS :

1958

(i) 357 lb./ac. (ii) 82.4 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4
Av. yield	121	173	472	661

S.E./mean = 36.8 lb./ac.

1959

(i) 718 lb./ac. (ii) 206.0 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4
Av. yield	201	489	761	1419

S.E./mean = 92.1 lb./ac.

Crop :- Pea. **Ref :- Bh. 59(SFT).**

Centre :- Champaran (c.f.). **Type :- 'M'.**

Object :—Type C—To compare the response of leguminous crops to alternative sources and leveles of phosphate.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Alluvial. (iii) Nil. (iv) and (v) N.A. (vi) to (x) N.A.

2. TREATMENTS :

0 =Control.
p_1 =30 lb./ac. of P_2O_5 as Super.
p_2 =60 lb./ac. of P_2O_5 as Super.

3. DESIGN :

(i) and (ii) The district has been divided into four agriculturally homogeneous zones and one field assistant posted in each zone. The field assistant conducts the trials in one Revenue circle or thana in the zone and the circle/thana is changed once in two years within the same zone. Each field assistant is required to conduct 31 trials in a year, 8 on a *kharif* cereal, 8 on a *rabi* cereal, 8 on cash crops, 4 on an oilseed crop and 3 on a leguminous crop. Half tthe number of trials cnoducted are of type A and the other half of type B on crops other than the legumes. The three trials on legumes are of type C. Residual effects of phosphate application are studied on type C trials in two out of the four zones each district every year. The experiments are laid out in randomly loctated field in randomly selected villages in each of the 4 zones at the rate of one experiment per village. (iii) (a) N.A. (b) 1/80 ac. (iv) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Grain yield. (iv) (a) 1958—contd. (b) No. (c) Nil. (v) As per design. (vi) and (vii) Nil.

5. RESULTS :

Treatment	0	p_1	p_2
Av. yield	592	724	872

G.M. = 729 lb./ac. ; S.E. = 11.6 lb./ac. and no. of trials = 6.

Crop :- Pea. **Ref :- Bh. 59(SFT).**

Centre :- Hazaribagh (c.f.). **Type :- 'M'.**

Object :—Type C—To compare the responses of leguminous crops to alernative sources and levels of phosphate.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Red. (iii) Nil. (iv) to (x) N.A.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type C above conducted at Champaran .

5. RESULTS :

Treatment	0	p_1	p_2
Av. yield	930	1341	1761

G.M. = 1344 lb./ac. ; S.E. = 45.4 lb./ac. and no. of trials = 3.

Crop :- Pea. **Ref :- Bh. 56(42).**

Site :- Govt. Agri. Farm, Musheri. **Type :- 'D'.**

Object :—To find out the effect of spraying fungicide on the incidence of powdery mildew of Pea.

1. BASAL CONDITIONS :

(i) (a) Wheat—G.M. (b) *Sanai*. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 25.11.1956. (iv) (a) Ploughing by tractor and by Bihar plough. (b) Behind the plough. (c) 60 lb./ac. (d) and (e) N.A. (v) 40 lb./ac. of P_2O_5 at sowing. (vi) BR—2. (vii) Unirrigated. (viii) Hoeing and weeding once. (ix) 3.58″. (x) 31.3.1957.

2. TREATMENTS :

2 fungicidal treatments : F_0=Control and F_1=Sparying with colloidal sulphur at 5 lb. /ac. in 100 gallons of water.

3. DESIGN :

(i) R.B.D. (ii) (a) 2. (b) N.A. (iii) 6. (iv) (a) 20′×32′. (b) 18′×30′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Aphid attack—controlled by Aldrine at 8 oz./ac. (iii) Pea yield. (iv) (a) 1958—contd. (b) No. (c) Nil. (v) (a) All the district Farms. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 885 lb./ac. (ii) 146.0 lb./ac. (iii) Treatment difference is not significant. (iv) Av. yield of grain in lb./ac.

Treatment	F_0	F_1
Av. yield	858	913

S.E./mean = 59.6 lb./ac.

Crop :- Pea. **Ref :- Bh. 55(63).**

Site :- Bot. Sub-Stn., Monghyr. **Type :- 'DM'.**

Object :—To study the effect of seed inoculation on Pea yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Kalai* and *Jowar*.(Fodder). (c) Nil. (ii) (a) Loam. (b) N.A. (iii) 10.11.1955. (iv) (a) 3 ploughings. (b) Behind the plough. (c) 30 srs./ac. (d) Row to row 1′. (e) N.A. (v) Nil. (vi) BR—65 (early). (vii) Unirrigated. (viii) Two weedings. (ix) 1.26″. (x) 2.3.1956.

2. TREATMENTS :

3 methods of inoculation : M_0=Control (no inoculation), M_1=Pea seed inoculated with root nodule bacteria and M_2=Soil inoculated with pea root nodule bacteria.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) N.A. (iii) 5. (iv) (a) and (b) 22′×25′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Germination, growth, flowering dates and yield of grain. (iv) (a) 1953–N.A. (b) and (c) No. (v) (a) All botanical sub-stations. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 314 lb./ac. (ii) 84.1 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2
Av. yield	336	283	322

S.E./mean = 37.7 lb./ac.

Crop :- Pea *(Rabi)*. **Ref :- Bh. 55(235).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'DM'.**

Object :—To study the effect of seed and soil inoculation with root nodules bacteria on Pea yield.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 30.11.1955. (iv) (a) 3 spadings. (b) Line sowing. (c) 2 oz./plot. (d) $1\frac{1}{2}' \times 1'$. (e) N.A. (v) Nil. (vi) N.A. (vii) Irrigated. (viii) 2 weedings. (ix) 0.84″. (x) 21.3.1956.

2. TREATMENTS :

1. Control.
2. Seed inoculation with its organism.
3. Soil inoculation with pea root nodule bacteria.
4. Cross inoculation with lucerne culture.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) 14′×11′. (b) 12′×9′. (v) 1′×1′. (vi) Yes.

4 GENERAL :

(i) Fair. (ii) N.A. (iii) Yield of grain. (iv) (a) 1955—N.A. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 94 lb./ac. (ii) 25.4 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4
Av. yield	104	78	130	65

S.E./mean = 12.7 lb./ac.

Crop :- Pea *(Rabi)*. **Ref :- Bh. 56(202).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'DM'.**

Object :—To see the effect of seed inoculation with root nodules bacteria with and without phosphate and Molybdenum on Pea yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Moong*. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 30.11.1956. (iv) (a) 3 spadings. (b) Line sowing. (c) 4 oz./plot. (d) Row to row 1′. (e) N.A. (v) N.A. (vi) Local. (vii) Irrigated. (viii) N.A. (ix) 5.32″. (x) 29.3.1957.

2. TREATMENTS :

T_0=Control, T_1=Seed inoculation, T_2=40 lb./ac. of P_2O_5 as Super, $T_3=T_1+T_2$, T_4=2 lb./ac. of molybdenum and $T_5=T_1+T_4$.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 14′×11′. (b) 12′×9′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1956—N.A. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 717 lb./ac. (ii) 166.4 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5
Av. yield	609	609	726	869	752	739

S.E./mean = 83.2 lb./ac.

Crop :- Pea *(Rabi).* **Ref :- Bh. 57(213).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'DM'.**

Object :—To test the effect of seed incculation with root nodules bacteria with and without phosphate and molybdenum on Pea yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Moong.* (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 26.10.1957. (iv) (a) 4 spadings. (b) Line sowing. (c) N.A. (d) Rows 1′ apart. (e) 1. (v) Nil. (vi) BR—118. (vii) Irrigated. (viii) 2 weedings by *khurpi.* (ix) Nil. (x) 1.3.1958.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 56(202) on page 670.

5. RESULTS :

(i) 585 lb./ac. (ii) 121.8 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5
Av. yield	648	587	525	428	635	687

S.E./mean = 60.9 lb./ac.

Crop :- Pea *(Rabi)* **Ref :- Bh. 58(227).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'DM'**

Object :- To test the effect of seed inoculation with root nodules bacteria with and without phosphate and molybdenum on Pea yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Moong.* (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 6.11.1958. (iv) (a) 3 spadings. (b) Line sowing. (c) 30 srs./ac. (d) rows 1′ apart. (e) N.A. (v) N.A. (vi) Bihar—118. (vii) Irrigated. (viii) 1 weeding on 16.12.1958. (ix) 3.78″. (x) 6.3.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 56(202) on page 670.

4. GENERAL :

(i) Lodged ; heavy rain on 22.1.1959. (ii) N.A. (iii) Grain and straw yield. (iv) (a) 1956—N.A. (b) and (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 888 lb./ac. (ii) 186.0 lb/ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5
Av. yield	894	894	829	817	946	946

S.E./mean = 93 lb./ac.

Crop :- Rahar *(Kharif).* **Ref :- Bh. 58, 59(6).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'M'.**

Object :—To study the effect of N, P, K and lime on Rahar.

1. BASAL CONDITIONS :

(i)(a) to (c) N.A. (ii) (a) Red laterite. (b) Refer soil analysis, Kanke. (iii) 2nd week of June. (iv) (a) 4 ploughings with *desi* plough. (b) Line sowing. (c) N.A. (d) 2′×3′. (e) N.A. (v) N.A. (vi) BR—12. ii)Unirrigated. (viii) Hoeing and weeding. (ix) and (x) N.A.

2. TREATMENTS :

1. Control (no manure).
2. 3600 lb./ac of lime.
3. 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super+40 lb./ac. of K_2O as Mur. Pot.
4. Treatment 3+3600 lb./ac. of lime.

Lime applied in 1958 only. Residual effect studied in subsequent years.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N A. (iii) 5. (iv) (a) 14′×20′. (b) 12′×18′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) *Cercospora* attack—Endrine was sprayed. (iii) Grain yield. (iv) (a) 1958—1960. (b) Yes. (c) No. (v) (a) and (b) N.A. (vi) and (vii) Nil.

1958

5. RESULTS :

(i) 500 lb./ac. (ii) 65.1 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4
Av. yield	49	724	181	1045

S.E./mean = 29.1 lb./ac.

1959

(i) 443 lb./ac. (ii) 93.1 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4
Av. yield	67	581	179	946

S E./mean = 41.6 lb./ac.

Crop :- Sugarcane. **Ref :- Bh. 54(95).**
Site :- Zonal Centre, Dehri-on-Sone. **Type :- 'M.'**

Object :—To find out the optimum dose of N, P and K for Sugarcane crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) Nil. (ii) (a) Sandy clay. (b) Refer soil anlysis, Dehri-on-sone. (iii) 1 to 4.12.1953. (iv) (a) 3 ploughings with tractor. (b) Planted in furrows. (c) 14520 three budded sets/ac. (d) 3′ between rows. (e) Nil. (v) Nil. (vi) CO—453. (vii) Irrigated. (viii) Intercultured after each irrigation. (ix) 33.79″. (x) 2 to 12.2.1955.

2. TREATMENTS :

All combinations of (1), (2) and (3).

(1) 3 levels of N : $N_0=0$, $N_1=40$, $N_2=80$ lb./ac.
(2) 3 levels of P_2O_5 : $P_0=0$, $P_1=50$, $P_2=100$ lb./ac.
(3) 3 levels of K_2O : $K_0=0$, $K_1=80$, $K_2=160$ lb./ac.

N applied as castorcake, P_2O_5 as Super and K_2O as Pot. Sul.

3. DESIGN :

(i) 3^3 partially confd. (ii) (a) and (b) 9 plots/block, 3 blocks/replication. (iii) 3. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) 1 border row on each side. (vi) Yes.

4. GENERAL :

(i) Good. (ii) No. (iii) Germination counting, tiller countings, height measurement, mature stalk counts and cane yield. (iv) (a)and (b) No. (c) Nil. (v) (a) All zonal centres. (b) Nil. (vi) Nil. (vii) The experiment was planned for 1954 but planting of sugarcane was done at the end of 1953.

5 RESULTS :

(i) 16.01 tons/ac. (ii) 9.33 tons/ac. (iii) Main effect of N alone is significant. (iv) Av. yied of sugarcane in tons/ac.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	12.31	13.49	13.27	11.47	14.40	13.30	13.02
N_1	19.44	15.07	18.30	19.77	14.59	18.45	17.60
N_2	14.33	20.03	17.82	16.91	17.92	17.35	17.39
Mean	15.36	16.20	16.46	16.05	15.60	16.37	16.01
K_0	14.33	18.16	15.66				
K_1	16.35	16.72	13.74				
K_2	15.40	13.71	19.99				

S.E. of any marginal mean = 1.80 tons/ac.
S.E. of body of any table = 3.11 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 54(147).**
Site :- Zonal Centre, Dehri-on-Sone. **Type :- 'M'.**

Object :—To find out the optimum dose of N, P and K for Sugarcane crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) Nil. (ii) (a) Sandy. (b) Refer soil analysis, Dehri-on-Sone. (iii) 12.11.1954. (iv) 3 tractor ploughings. (b) Flat method. (c) 60 mds./ac. (d) Row to row 3′. (e) Nil. (v) Nil. (vi) BO—17. (vii) Irrigated. (viii) Interculturing and earthing up. (ix) N.A. (x) 2 to 15.3.1956.

2. TREATMENTS :

Same as in expt. no. 54(95) on page 672.

3. DESIGN :

(i) 3^3 partially confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) N.A. (iii) 4. (iv) (a) 60½′×24′. (b) 60½′×18′. (v) 1 row on either side along length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Cane yield. (iv) (a) to (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 19.57 ons/ac (ii) 4.87 tons/ac. (iii) Main effect of N alone is significant. (iv) Av. yield of sugarcane in tons/ac.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	19.81	18.45	17.08	19.48	18.55	17.31	18.45
N_1	16.78	20.81	20.32	19.53	19.26	19.12	19.30
N_2	21.40	21.32	20.13	19.82	21.38	21.65	20.95
Mean	19.33	20.19	19.18	19.61	19.73	19.36	19.57
K_0	19.55	21.29	17.99				
K_1	19.48	19.49	20.22				
K_2	18.96	19.80	19.33				

S.E. of any magrinal mean = 0.81 tons/ac.
S.E. of body of any table = 1.41 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 54(146).**

Site :- Zonal Centre, Dehri-on-Sone. **Type :- 'M'.**

Object :—To compare pressmud and molasses with the standard manures for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy. (b) Refer soil analysis, Dehri-on-Sone. (iii) N.A. (iv) (a) 5 ploughings. (b) Flat method. (c) 55 mds./ac. (d) Row to row 3′. (e) Nil. (v) Nil. (vi) BO—17. (vii) Irrigated. (viii) Weeding, interculturing and earthing up. (ix) and (x) N.A.

2. TREATMENTS :

6 manurial treatments : M_0=Control, M_1=60 lb./ac. of N as A/S+75 lb./ac. of P_2O_5 as Super, M_2=100 mds./ac. of press mud, M_3=200 mds/ac. of pressmud, M_4=100 mds/ac. of molasses and M_5=200 mds/ac. of molasses.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) 1 row on either side along the length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Cane yield. (iv) (a) to (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 27.01 tons/ac. (ii) 1.82 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	29.20	28.06	28.65	27.22	26.56	22.37

S.E./mean = 0.74 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 56(141).**

Site :- Zonal Centre, Harinagar. **Type :- 'M'.**

Object :—To study the utility of A/S/N as source of N against oilcakes and A/S for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis. Harinagar. (iii) 6.11.1956. (iv) (a) 2 tractor ploughings and 5 harrowings by disc harrow. (b) Flat planting. (c) 60 mds/ac. (d) Rows 3′ apart. (e) Nil. (v) Nil. (vi) BO—14. (vii) Unirrigated. (viii) 6 intercultural operations with 5-tyred cultivator. (ix) 66.26″. (x) 14 to 16.2.1958.

2. TREATMENTS :

All combinations of (1) and (2)+a control

(1) 2 doses of N and P_2O_5 : D_1=60 lb./ac. of N+75 lb./ac. of P_2O_5 and D_2=120 lb./ac. of N+150 lb./ac. of P_2O_5.

(2) 4 sources of N : S_1=A/S, S_2=A/S/N, S_3=G.N.C. and S_4=Castorcake.

P_2O_5 applied as Super.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) One row on each side along length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) No. of mature stalks, sucrose % and cane yield. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 32.93 tons/ac. (ii) 3.21 tons/ac. (iii) None of the effects is significant. (iv) Av. yield of cane in tons/ac.

Control = 29.98 tons/ac.

	S_1	S_2	S_3	S_4	Mean
D_1	32.11	32.63	32.15	35.01	32.98
D_2	33.29	34.98	33.29	32.92	33.62
Mean	32.70	33.81	32.72	33.97	33.30

S.E. of D marginal mean = 0.80 tons/ac.
S.E. of S marginal mean = 1.13 tons/ac.
S.E. of body of table or control mean = 1.61 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 58(87).**
Site :- Zonal Centre, Harinagar. **Type :- 'M'.**

Object :—To study the utility of A/S/N as source of N against oilcakes and A/S for Sugarcane.

BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Harinagar. (iii) 10.11.1958. (iv) (a) Stubble breaking with disc plough followed by green manuring, 3 harrowings and beaming. (b) Flat method. (c) 60 mds/ac. (d) Row to row 3′. (e) Nil. (v) G.M. applied. (vi) BO—14. (vii) Irrigated. (viii) Regular harrowing and earthing up in July. (ix) 39.19″. (x) 3 to 5.5.1960.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 56(141) on page 674.

4. GENERAL :

(i) Slight lodging in November 1959. (ii) Nil. (iii) Mature stalk count, cane height and cane yield. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 26.00 tons/ac. (ii) 3.35 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Control = 21.12 tons/ac.

	S_1	S_2	S_3	S_4	Mean
D_1	25.16	25.53	24.69	28.10	25.87
D_2	27.62	25.79	26.71	29.29	27.35
Mean	26.39	25.65	25.70	28.70	26.61

S.E. of D marginal mean = 0.84 tons/ac.
S.E. of K marginal mean = 1.18 tons/ac.
S.E. of body of table or control mean = 1.78 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 58(85).**
Site : Zonal Centre, Harinagar. **Type :- 'M'.**

Object :—To study the utility of A/S/N as source of N against oilcakes and A/S for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Harinagar. (iii) 29, 30.1.1958. (iv) (a) 4 ploughings followed by disc harrowing. (b) Flat planting. (c) 60 mds/ac. (d) Rows 3′ apart. (e) N.A. (v) G.M. with *Sanai.* (vi) BO—14. (vii) Irrigated. (viii) Interculturing and earthing up. (ix) 69.98″ (x) 4 to 6.3.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 56(141) on page 674.

4. GENERAL :

(i) Average. (ii) Attack of borer. (iii) No. of tillers per plant, no. of mature stalk, sucrose % and cane yield. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 28.35 tons/ac. (ii) 6.12 tons/ac. (iii) None of the effects is significant. (iv) Av. yield of sugarcane in tons/ac.

Control = 25.42 tons/ac.

	S_1	S_2	S_3	S_4	Mean
D_1	29.17	28.73	27.55	27.15	28.15
D_2	28.80	29.83	29.39	29.09	29.28
Mean	28.99	29.28	28.47	28.12	28.72

S.E. of D marginal mean = 1.53 tons/ac.
S.E. of K marginal mean = 2.16 tons/ac.
S.E. of body of table or control mean = 3.06 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 56(144).**
Site : Zonal Centre, Harinagar. **Type :- 'M'.**

Object :—To compare the effect of compost with A/S in combination with Super on Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Harinagar. (iii) 4.11.1956. (iv) (a) 2 tractor ploughings followed by one disc harrowing. (b) Flat planting. (c) 60 mds./ac. (d) Rows 3′ apart. (e) Nil. (v) Nil. (vi) BO—14. (vii) Unirrigated. (viii) 6 intercultural operations with 5-tyred cultivator. (ix) 66.26″. (x) 30.1.1958 to 3.2.1958.

2. TREATMENTS :

4 manurial treatments : M_0=Control (no manure), M_1=60 lb./ac. of N as compost+M, M_2=30 lb./ac. of N as compost+30 lb./ac. of N as A/S+M and M_3=60 lb./ac. of N as A/S+M, where M=75 lb./ac. of P_2O_5 as Super.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) One row on each side along length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) No. of mature stalks, sucrose % and cane yield. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 29.68 tons/ac. (ii) 2.63 tons./ac. (iii) Treatment differences are significant. (iv) Av. [yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3
Av. yield	26.13	30.06	31.53	31.01

S.E./mean = 1.07 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 57(109).**

Site :- Zonal Centre, Harinagar. **Type :- 'M'.**

Object :—To compare the effect of compost with A/S in combination with Super on Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Harinagar. (iii) 3, 4.11.1957. (iv) (a) 4 ploughings followed by disc harrowing. (b) Flat planting (c) 60 mds./ac. (d) Rows 3′ apart. (e) Nil. (v) G.M. with *Sanai.* (vi) BO—17. (vii) Irrigated. (viii) Interculturing and earthing. (ix) 69.98″. (x) 1 to 3.3.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 56(144) on page 676.

4. GENERAL :

(i) Average. (ii) Attack of borers. (iii) No. of mature stalks, sucrose % and cane yield. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 30.01 tons/ac. (ii) 1.64 tons/ac. (iii) Treatment differences are significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3
Av. yield	25.42	30.27	33.43	30.93

S.E./mean = 0.67 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 58(89).**

Site :- Zonal Centre, Harinagar. **Type :- 'M'.**

Object :—To compare the effect of compost with A/S in combination with Super on Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Harinagar. (iii) 9.11.1958. (iv) (a) Stubble breaking with disc plough followed by green manuring, 4 harrowings and then beaming. (b) Flat method. (c) 60 mds/ac. (d) Row to row 3′. (e) Nil. (v) G.M. with *Sanai.* (vi) BO—17. (medium). (vii) Irrigated. (viii) Harrowing and earthing up in July. (ix) 39.19″. (x) 23, 24.4.1960.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 56(144) on page 676.

4. GENERAL :

(i) Slight lodging in Nov. 1959. (ii) Nil. (iii) Mature stalk count, cane height and cane yield. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 29.95 tons/ac. (ii) 5.49 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3
Av. yield	24.46	31.11	32.62	31.59

S.E./mean = 2.24 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 54(120).**
Site :- Zonal Centre, Harinagar. **Type :- 'M'.**

Object :—To compare press mud and molasses with standard manures for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) 2 mds. of Super. (ii) (a) Sandy loam. (b) Refer soil analysis, Harinagar. (iii) 14, 15.1.1954. (iv) (a) Twice harrowing, one disc ploughing and then tractor harrowing. (b) Flat method. (c) 15000 setts/ac. (d) Rows 3′ apart. (e) Nil. (v) G.M. with *sanai.* (vi) BO—21 (medium). (vii) Unirrigated. (viii) Interculturing with 5-tyred cultivator. (ix) 66.6″. (x) 11 to 13.1.1955.

2. TREATMENTS :

6 manurial treatments : M_0=Control, M_1=A/S+Triple Super, M_2=100 mds./ac. of pressmud, M_3=200 mds./ac. of pressmud, M_4=100 mds./ac. of molasses and M_5=200 mds./ac. of molasses.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) 1 row on either side along length. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Height, no. of mature stalks and cane yield. (iv) (a) 1954—1956. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 14.07 tons/ac. (ii) 5.70 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	14.22	13.22	12.93	16.42	13.63	13.99

S.E./mean = 2.33 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 55(209).**
Site :- Zonal Centre, Harinagar. **Type :- 'M'.**

Object :—To compare pressmud and molasses with standard manures for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Harinagar. (iii) 19.2.1955. (iv) (a) Stubble breaking with disc plough followed by green manuring with *sanai*, 3 harrowings and then beaming. (b) Flat method. (c) 60 mds./ac. (d) Row to row 3′. (e) —. (v) G.M. (vi) BO—21. (vii) Irrigated. (viii) Nil. (ix) 91.94″. (x) 16 to 19.2.1956.

2. TREATMENTS:

6 manurial treatments : M_0=Control (no manure), M_1=60 lb./ac. of N as A/S+75 lb./ac. of P_2O_5 as Super, M_3=60 lb./ac. of N as molasses+75 lb./ac. of P_2O_5 as Super, M_1=120 lb./ac. of N as molasses+150 lb./ac. of P_2O_5 as Super, M_4=60 lb./ac. of N as pressmud+75 lb./ac. of P_2O_5 as Super and M_5=120 lb./ac. of N as pressmud+150 lb /ac. of P_2O_5 as Super.

3. DESIGN:

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 60.5′×2.4′. (b) 60.5′×18′. (v) 1 row on either side along the length. (vi) Yes.

4. GENERAL:

(i) No lodging. (ii) Nil. (iii) Biometric observations and cane yield. (iv) (a) 1954—1956. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 8.80 tons/ac. (ii) 3.59 tons/ac. (iii) Treatment differences are significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	10.95	5.47	10.80	11.13	5.29	9.18

S.E./mean = 1.47 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 56(142).**

Site :- Zonal Centre, Harinagar. **Type :- 'M'.**

Object :—To compare pressmud and molasses with standard manure for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai*. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Harinagar. (iii) 9.2.1956. (iv) 2 tractor ploughings followed by disc harrowing. (b) Flat planting. (c) 60 mds./ac. (d) Rows 3′ apart. (e) Nil. (v) *Sanai* buried in *situ*. (vi) BO—22. (vii) Irrigated. (viii) Nil. (ix) 85.13″. (x) 9.2.1957.

2. TREATMENTS :

6 manurial treatments : M_0=Control, M_1=60 lb./ac. of N as A/S+75 lb./ac. of P_2O_5 as Super, M_2=100 mds./ac. of pressmud, M_3=200 mds./ac. of pressmud, M_4=100 mds./ac. of molasses and M_5=200 mds./ac. of molasses.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) 1 row on either side along length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Attack of borers. (iii) Biometric observations and cane yield. (iv) (a) 1954—1956. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 17.25 tons/ac. (ii) 5.40 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of sugarcane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	14.25	12.31	19.84	19.10	19.10	18.92

S.E./mean = 2.20 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 55(214).**

Site :- Zonal Centre, Harinagar. **Type :- 'M'.**

Object :—To find out the optimum dose of N, P and K for Sugarcane crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai*. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Harinagar. (iii) 17.10.1955. (iv) (a) 4 ploughings by *desi* plough. (b) Flat planting. (c) 60 mds./ac. (d) Row 3′ apart. (e) Nil. (v) G.M. with *sanai*. (vi) BO—22. (vii) Irrigated. (viii) Nil. (ix) 85.13″. (x) 29.3.1957.

2. TREATMENTS :

Same as in expt. no. 54(95) on page 672.
N applied as A/S, P_2O_5 as Super and K_2O as Mur. Pot.

3. DESIGN :

(i) 3^3 partially confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) N.A. (iii) 4. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) 1 row on each side along length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Attack of borers. (iii) No. of mature stalks, and cane yield. *(iv)* (a) to *(c)* No. (v) to (vii) Nil.

5. RESULTS :

(i) 26.29 tons/ac. (ii))5.87 tons/ac. (iii) None of the effects is significant. (iv) Av. yield of cane in tons/ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	23.41	25.19	23.12	21.24	24.03	26.43	23.90
N_1	28.10	28.77	28.57	26.67	29.57	29.20	28.48
N_2	26.57	26.75	26.14	25.65	26.26	27.55	26.49
Mean	26.03	26.90	25.94	24.52	26.62	27.73	26.29
P_0	22.35	26.14	25.08				
P_1	30.00	26.57	23.30				
P_2	25.74	28.00	29.45				

S.E. of any marginal mean = 0.98 tons/ac.
S.E. of body of any table = 1.69 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 54(121).**

Site :- Zonal Centre, Harinagar. **Type :- 'M'.**

Object :—To study the effect of phosphate manuring of G.M. crops on subsequent Sugarcane crop.

1. BASAL CONDITIONS :

(i) (a) G.M. crop—Sugarcane—G.M. crop. (b) *Sanai*+Soyabean. (c) 2 mds./ac. of Super. (ii) (a) Sandy loam. (b) Refer soil analysis, Harinagar. (iii) 13.1.1954. (iv) (a) Harrowing two months after burying G.M. crop, one line ploughing and then tractor harrowing. (b) Flat method. (c) 15000 three-budded setts/ac. (d) Rows 3′ apart. (e) N.A. (v) Nil. (vi) CO—453 (medium). (vii) Unirrigated. (viii) Interculturing with 5-tyred cultivator. (ix) 66.6″. (x) 25.1.1955.

2. TREATMENTS :

All combinations of (1) and (2).

(1) 2 G.M. crops : G_1=*Sanai* and G_2=Soyabean.

(2) 6 levels of P_2O_5 applied to G.M. as Super : P_0=0 lb./ac., P_1=50 lb./ac., P_2=100 lb./ac., P_3=150 lb./ac., P_4=200 lb./ac. and P_5=250 lb./ac.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 6. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) 1 row on either side along length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Height, no. of mature stalks and cane yield. (iv) 1954—1955. (b) and (c) No. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 26 47 tons/ac. (ii) 5.66 tons/ac. (iii) None of the effects is significant. (iv) Av. yield of cane in tons/ac.

	P_0	P_1	P_2	P_3	P_4	P_5	Mean
G_1	25.90	28.50	30.05	28.50	30.12	22.81	27.65
G_2	24.10	28.69	28.10	23.44	24.90	22.44	25.28
Mean	25.00	28.60	29.08	25.97	27.51	22.63	26 47

S.E. of G marginal mean = 0.94 tons/ac.
S.E. of P marginal mean = 1.63 tons/ac.
S.E. of body of table = 2.31 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 55(210).**
Site :- Zonal Centre, Harinagar. **Type :- 'M'.**

Object :—To study the effect of phosphate manuring of G. M. crops on subsequent Sugarcane.

1. BASAL CONDITIONS :

(i) (a) G.M. crop—Sugarcane—G.M. crop. (b) *Sanai+Urid.* (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Harinagar. (iii) 7.10.1955. (iv) (a) Two ploughings by tractor followed by 5 harrowings by disc harrow. (b) Flat method of planting. (c) 60 mds./ac. (d) Rows 3′ apart. (e) Nil. (v) Nil. (vi) BO—17. (vii) Irrigated. (viii) Nil. (ix) 85.13″. (x) 23.1.1957.

2. TREATMENTS :

All combinations of (1) and (2)
(1) 2 G.M. crops : G_1=*Sanai*, and G_2=*Urid.*
(2) 6 levels of P_2O_5 as Super : $P_0=0$, $P_1=50$, $P_2=100$, $P_3=150$, $P_4=200$ and $P_5=250$ lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 12. (b) N.A. (iii) 6. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) One row on either side along length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Attack of borers—no control measures taken. (iii) No. of mature stalks, sucrose % and cane yield. (iv) (a) 1954—1955. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 21.09 tons/ac. (ii) 3.87 tons/ac. (iii) None of the effects is significant. (iv) Av. yield of cane in tons/ac.

	P_0	P_1	P_2	P_3	P_4	P_5	Mean
G_1	21.60	22.85	19.14	21.78	23.44	20.39	21.53
G_2	22.11	20.20	18.33	21.38	21.01	20.79	20.64
Mean	21.86	21.53	18.74	21.58	22.23	20.59	21.09

S.E. of P marginal mean = 1.12 tons/ac.
S.E. of G marginal mean = 0.65 tons/ac.
S.E. of body of table = 1.58 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 56(145).**
Site :- Zonal Centre, Harinagar. **Type :- 'M'.**

Object :—To find the dose and time of application of different kinds of nitrogeneous fertilizers for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Harinagar. (iii) 13, 14 11.1956. (iv) (a) 2 ploughings by tractor followed by 5 harrowings by disc harrow. (b) Flat planting. (c) 60 mds./ac. (d) Rows 3′ apart. (e) N.A. (v) 75 lb./ac. of P_2O_5 as Super at planting. (vi) BO—17. (vii) Unirrigated. (viii) Interculturing and earthing up. (ix) 66.26″. (x) 10 to 14.1.1958.

2. TREATMENTS :

All combinations of (1) and (2)+a control (no manure)

(1) 2 sources of 60 lb./ac. of N : S_1=A/S and S_2=A/S/N.

(2) 5 times and methods of application : T_1=Full dose at planting, $T_2=\frac{3}{4}$th at planting+$\frac{1}{4}$th at earthing, $T_3=\frac{1}{2}$ at planting+$\frac{1}{2}$ at earthing, $T_4=\frac{1}{4}$th at planting+$\frac{3}{4}$th at earthing and T_5=Full dose at earthing.

3. DESIGN :

(i) R.B.D.. (ii) (a) 11. (b) N.A. (iii) 4. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) One row on either side along length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) No. of mature stalks, sucrose % and cane yield. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 21.39 tons/ac. (ii) 2.87 tons/ac. (iii) None of the effects is significant. (iv) Av. yield of cane in tons/ac.

Control = 19.78 tons/ac.

	T_1	T_2	T_3	T_4	T_5	Mean
S_1	21.43	21.91	22.72	20.33	22.13	21.70
S_2	22.28	21.69	21.87	21.32	19.82	21.40
Mean	21.86	21.80	22.30	20.83	20.98	21.55

S.E. of S marginal mean = 0.64 tons/ac.
S.E. of T marginal mean = 1.01 tons/ac.
S.E. of body of table or control mean = 1.44 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 58(86).**
Site :- Zonal Centre, Harinagar. **Type :- 'M'.**

Object :—To find the dose and time of application of different kinds of nitrogeneous fertilizers for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Harinagar. (iii) 23 to 25.1.1958. (iv) (a) G.M. with *sanai*, 3 harrowings and beaming. (b) Flat method. (c) 60 mds./ac. (d) Row to row 3′. (e) Nil. (v) GM+75 lb./ac of P_2O_5 at time of planting. (vi) BO—17. (vii) Irrigated. (viii) Harrowing and earthing up. (ix) 69.98″. (x) 7 to 10.3.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 56(145) on page 681.

4. GENERAL :

(i) No lodging. (ii) Borer attack—hand picking done. (iii) Tiller and mature stalk counts, height, cane yield and juice quality. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 23.93 tons/ac. (ii) 2.24 tons/ac. (iii) Main effects of S and T are significant. (iv) Av. yield of sugarcane in tons/ac.

Control = 21.09 tons/ac.

	T_1	T_2	T_3	T_4	T_5	Mean
S_1	24.17	27.18	23.88	23.55	23.47	24.45
S_2	24.46	26.60	23.88	22.78	22.11	23.97
Mean	24.32	26.89	23.88	23.17	22.79	24.21

S.E. of S marginal mean = 0.50 tons/ac.
S.E. of T marginal mean = 0.79 tons/ac.
S.E. of body of table or control mean = 1.12 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 58(91).**

Site :- Zonal Centre, Harinagar. **Type :- 'M'.**

Object :—To find the dose and time of application of different kinds of nitrogeneous fertilizers for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Harinagar. (iii) 7.11.1958. (iv) (a) Stubble breaking with disc plough, 3 harrowings and beaming. (b) Flat method. (c) 60 mds./ac. (d) Row to row 3′. (e) Nil. (v) G.M.+75 lb./ac. of P_2O_5 as Super at planting. (vi) BO—17. (vii) Irrigated. (viii) Harrowing and earthing up. (ix) 39.19″. (x) 20 to 22.4.1960.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 56(145) on page 681.

4. GENERAL :

(i) Slight lodging in November, 1959. (ii) Nil. (iii) No. of mature stalks, height and cane yield. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 30.15 tons/ac. (ii) 3.08 tons/ac. (iii) None of the effects is significant. (iv) Av. yield of sugarc aneni tons/ac.

Control = 26.89 tons/ac.

	T_1	T_2	T_3	T_4	T_5	Mean
S_1	23.14	31.92	30.93	30.12	29.72	29.17
S_2	30.75	30.49	30.34	28.51	29.79	29.98
Mean	26.95	31.21	30.64	29.32	29.76	29.58

S.E. of S marginal mean = 0.69 tons/ac.
S.E. of T marginal mean = 1.09 tons/ac.
S.E. of body of table or control mean = 1.54 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 55(211).**

Site :- Zonal Centre, Hasanpur. **Type :- 'M'.**

Object :—To study the effect of phosphate manuring of G.M. crop on subsequent Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai* and soyabean. (c) As per treatments. (ii) (a) Sandy loam. (b) N.A. (iii) 20 to 22.2.1955. (iv) (a) 2 ploughings by tractor and ridging. (b) Flat planting. (c) 14440 three-budded setts/ac. (d) Rows 3′ apart. (e) Nil. (v) Nil. (vi) BO—17. (vii) Unirrigated. (viii) 6 intercultural operations with 5-tyred cultivator (ix) 70.45″. (x) 5 to 15.3.1956.

2. TREATMENTS :

Same as in expt no. 54(121) on page 680.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 6. (iv) (a) 40.5′×24′. (b) 40.5′×18′. (v) 1 row on either side along length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) No. of mature stalks, sucrose % and cane yield. (iv) (a) and (b) No. (c) Nil. (v) (a) Pusa, Motihari and Motipur. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 16.81 tons/ac. (ii) 1.30 tons/ac. (iii) Main effects of P and G and interaction P×G are highly significant. (iv) Av. yield of cane in tons/ac.

	P_0	P_1	P_2	P_3	P_4	P_5	Mean
G_1	15.49	16.44	21.07	17.65	17.14	16.37	17.36
G_2	16.11	16.29	16.26	16.37	16.22	16.22	16.25
Mean	15.80	16.37	18.67	17.01	16.68	16.30	16.81

S.E of G marginal mean = 0.22 tons/ac.
S.E. of P marginal mean = 0.38 tons/ac.
S.E. of body of table = 0.53 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 55(215).**

Site :- Zonal Centre, Hasanpur. **Type :- 'M'.**

Object :—To find out the optimum dose of N, P and K for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Rahar. (c) Nil. (ii) (a) Loam. (b) N.A. (iii) 24 to 26.2.1955. (iv) Ploughing with tractor, ridging with bullock plough. (b) Flat method. (c) N.A. (d) Row to row 3′. (e) Nil. (v) Nil. (vi) BO—77. (vii) Unirrigated. (viii) Interculturing with 5-tyred cultivator. (ix) 70.45″. (x) 9.2.1956 to 4.3.1956.

2. TREATMENTS :

Same as in expt. no. 54(95) on page 672.
N applied as A/S, P_2O_5 as Super and K_2O as Mur. Pot.

3. DESIGN :

(i) 3^3 partially confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) N.A. (iii) 4. (iv) (a) 60.5′×24′. (b) 60.5′×18′, (v) 1 row on either side along length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Height, no. of mature stalks and cane yield. (iv) (a) to (c) No. (v) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 15.16 tons/ac. (ii) 2.47 tons/ac. (iii) Main effects of N, P and K alone are significant. (iv) Av. yield of cane in tons/ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	13.97	13.29	12.88	12.99	12.43	14.72	13.38
N_1	14.83	14.81	14.86	13.35	14.79	16.36	14.83
N_2	16.27	18.42	17.09	16.73	16.08	18.98	17.26
Mean	15.02	15.51	14.94	14.36	14.43	16.69	15.16
P_0	13.51	14.56	15.00				
P_1	15.23	14.98	13.09				
P_2	16.33	16.97	16.75				

S.E. of any marginal mean = 0.41 tons/ac.
S.E. of body of table = 0.71 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 54(123).**

Site :- Zonal Centre, Harsanpur. **Type :- 'M'.**

Object :—To compare the effects of A/N and A/S on Sugarcane yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Rahar.* (c) Nil. (ii) (a) Loam. (b) N.A. (iii) 1, 2.3.1954. (iv) (a) 3 ploughings with tractor, and ridging. (b) Flat method. (c) 60 mds./ac. (d) Rows 3′ apart. (e) Nil. (v) Nil. (vi) BO—11. (vii) Unirrigated. (viii) Interculturing with 5-tyred cultivator till earthing up. (ix) 57.22″. (x) 23 to 26.4.1955.

2. TREATMENTS :

All combinations of (1) and (2)+control.

(1) 2 sources of N : S_1=A/S and S_2=A/N.
(2) 3 levels of N : N_1=40, N_2=80 and N_3=120 lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 6. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) 1 row along the length on both sides. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil, (iii) Height, no. of mature stalks and cane yield. (iv) (a) and (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 22.08 tons/ac. (ii) 0.04 tons/ac. (iii) All effects are highly significant. (iv) Av. yield of cane in tons/ac.

Control =23 62

	N_1	N_2	N_3	Mean
S_1	21.78	21.21	21.80	21.60
S_2	20.11	23.07	23.00	22.06
Mean	20.94	22.14	22.40	21.83

Crop :- Sugarcane. **Ref :- Bh. 56(123).**

Site :- Zonal Centre, Jineshwargarh. **Type :- 'M'.**

Object :—To test A/S/N as a source of N against oil cakes and A/S for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) Nil. (ii) (a) Sandy to sandy loam. (b) N.A. (iii) 26, 27.11.1956. (iv) (a) 2 tractor disc ploughings and two disc harrowings with 1 beaming behind the harrow. (b) Flat planting. (c) 50 mds./ac. (d) Rows 3′ apart. (e) Nil. (v) G.M. with *sanai.* (vi) BO—14. (vii) Irrigated. (viii) 9 interculturing operations with 5-tyred cultivator. (ix) 25.65″. (x) 17 to 19.1.1958.

2. TREATMENTS :

All combinations of (1) and (2)+a control (N_0S_0)

(1) 4 sources of N : S_1=A/S, S_2=A/S/N, S_3=G.N.C. and S_4=Castorcake.
(2) 2 levels of N and P_2O_5 : N_1=80 lb./ac. of N+60 lb./ac. of P_2O_5 as Super and N_2=160 lb./ac. of N +120 lb./ac. of P_2O_5 as Super.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) 1 row on either side along length. (v) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) No. of mature stalks, sucrose % and cane yield. (iv) (a) 1956—1959. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 14.34 tons/ac. (ii) 4.12 tons/ac. (iii) Treatment differences are highly significant. (iv) Av. yield of cane in tons/ac.

Treatment	N_0S_0	N_1S_1	N_2S_1	N_1S_2	N_2S_2	N_1S_3	N_2S_3	N_1S_4	N_2S_4
Av. yield	13.78	13.11	8.93	16.64	12.56	16.86	12.67	17.63	16.97

S.E./mean = 2.06 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 57(242).**

Site :- Zonal Centre, Jineshwargarh. **Type :- 'M'.**

Object :—To compare A/S/N as source of N against oil cakes and A/S for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) N.A. (iv) (a) 5 ploughings. (b) Flat method. (c) 60 mds./ac. (d) Row to row 3′. (e) Nil. (v) Nil. (vi) BO—17. (vii) Irrigated. (viii) Weeding, interculturing and earthing up. (ix) and (x) N.A.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 56(141) on page 674.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Cane yield. (iv) (a) 1956—1959. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 18.82 tons/ac. (ii) 2.35 tons/ac. (iii) None of the effects is significant. (iv) Av. yield of cane in tons/ac.

Control = 16.42 tons/ac.

	S_1	S_2	S_3	S_4	Mean
D_1	18.18	17.15	19.73	23.44	19.63
D_2	16.75	18.73	21.16	17.82	18.62
Mean	17.47	17.94	20.45	20.63	19.12

S.E. of D marginal mean = 0.59 tons/ac.
S.E. of S marginal mean = 0.83 tons/ac.
S.E. of body of table = 1.18 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 58(47).**

Site :- Zonal Centre, Jineshwargarh. **Type :- 'M'.**

Object :—To test A/S/N as source of N against oil cakes and A/S for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) Nil. (ii) (a) Light loam. (b) N.A. (iii) 10, 11.3.1958. (iv) (a) 4 ploughings by *desi* plough. (b) Row planting. (c) 60 three-budded setts/row. (d) Rows 3′ apart. (e) Nil. (v) Nil. (vi) BO—14 (medium). (vii) Irrigated. (viii) 9 interculturings with 5-tyred cultivator. (ix) 42.75″. (x) 3 to 7.3.1959.

2. TREATMENTS :

M_0=Control (no manure).
M_1= 80 lb./ac. of N as A/S+ 60 lb./ac. of P_2O_5 as Super.
M_2=160 lb./ac. of N as A/S+120 lb./ac. of P_2O_5 as Super.
M_3= 80 lb./ac. of N as A/S/N+ 60 lb./ac. of P_2O_5 as Super.
M_4=160 lb./ac. of N as A/S/N+120 lb./ac. of P_2O_5 as Super.
M_5= 80 lb./ac. of N as G.N.C. and A/S/N+ 60 lb./ac. of P_2O_5 as Super.
M_6=160 lb./ac. of N as G.N.C. and A/S/N+120 lb./ac. of P_2O_5 as Super.
M_7= 80 lb./ac. of N as Castor cake and A/S/N+ 60 lb./ac. of P_2O_5 as Super.
M_8=160 lb /ac. of N as Castor cake and A/S/N+120 lb./ac. of P_2O_5 as Super.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) One row on either side. (vi) Yes.

4. GENERAL :

(i) Average. (ii) No major pest incidence. (iii) Biometric observations and cane yield. (iv) (a) 1956—1959. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 17.99 tons/ac. (ii) 6.19 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8
Av. yield	13.79	15.55	21.03	18.69	23.42	18.81	16.27	19.42	14.95

S.E./mean = 3.10 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 59(28).**

Site :- Zonal Centre, Jineshwargarh. **Type :- 'M'.**

Object :—To test A/S/N as a source of N against oil cakes and A/S for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai*. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 28.2.59 to 1.3.59. (iv) (a) 4 ploughings by *desi* plough. (b) Row planting. (c) 60 three-budded setts/row. (d) Rows 3′ apart. (e) N.A. (v) G M. with *sanai*. (vi) BO—14 (medium). (vii) Irrigated. (viii) One earthing ; interculturing with 5-tyred cultivator. (ix) 36.25″. (x) 21, 22.1.1960.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 56(123) on page 685.

4. GENERAL :

(i) Good. (ii) Severe attack of beetle grab—no control measures taken. (iii) Count of mature stalks and cane yield. (iv) (a) and (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) Nil. (vii) No reason given for the very low yield of control.

5. RESULTS :

(i) 9.09 tons/ac. (ii) 3.21 tons/ac. (iii) Treatment differences are highly significant. (iv) Av. yield of sugarcane in tons/ac.

Treatment	N_0S_0	N_1S_1	N_2S_1	N_1S_2	N_2S_2	N_1S_3	N_2S_3	N_1S_4	N_2S_4
Av. yield	0.84	10.32	11.39	8.49	14.91	6.83	8.19	10.25	10.62

S.E./mean = 1.61 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 56(124).**

Site :- Zonal Centre, Jineshwargarh. **Type :- 'M'.**

Object :—To find out the dose and time of application of different kinds of nitrogeneous fertilizers for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) Nil. (ii) (a) Sandy to sandy loam. (b) N.A. (iii) 5, 6.12.1956. (iv) (a) 2 tractors disc ploughings and twice disc harrowings. (b) Flat planting. (c) 50 mds./ac. (d) Rows 3′ apart. (e) Nil. (v) G.M. with *Sanai* 3 weeks before planting, 60 lb./ac. of P_2O_5 as Super at planting. (vi) BO—14 (medium). (vii) Irrigated. (viii) 9 interculturing operations 5-tyred cultivator. (ix) 25.95″. (x) 1 to 4.3.1958.

2. TREATMENTS :

M_0=Control (no manure)
M_1=80 lb./ac. of N as A/S at planting.
M_2=80 lb./ac. of N as A/S/N at planting.
M_3=60 lb./ac. of N as A/S at planting+20 lb./ac. of N as A/S at earthing.
M_4=60 lb./ac. of N as A/S/N at planting+20 lb./ac. of N as A/S/N at earthing.
M_5=40 lb./ac. of N as A/S at planting+40 lb./ac. of N as A/S at earthing.
M_6=40 lb./ac. of N as A/S/N at planting+40 lb./ac. of N as A/S/N at earthing.
M_7=20 lb./ac. of N as A/S at planting+60 lb./ac. of N as A/S at earthing.
M_8=20 lb /ac. of N as A/S/N at planting+60 lb./ac. of N as A/S/N at earthing.
M_9=80 lb./ac. of N as A/S at earthing.
M_{10}=80 lb./ac. of N as A/S/N at earthing.

3. DESIGN :

(i) R.B.D. (ii) (a) 11. (b) N.A. (iii) 4. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) 1 row on either side along length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) No. of mature stalks, sucrose % and cane yield. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 15.77 tons/ac. (ii) 3.38 tons/ac. (iii) Treatment differences are highly significant. (iv) Av. yield of sugarcane.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8	M_9	M_{10}
Av. yield	14.84	11.28	17.19	17.34	16.20	14.55	15.17	17.48	15.68	14.95	18.84

S.E./mean = 1.69 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 58(54).**

Site :- Zonal Centre, Jineshwargarh. **Type -: 'M'.**

Object :—To find out the dose and time of application of different kinds of Nitrogeneous fertilizers for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) Nil. (ii) (a) Light loam. (b) N.A. (iii) 22, 23.3.1958. (iv) (a) 4 ploughings by *desi* plough. (b) Row planting. (c) 60 three-budded setts/ac. (d) Rows 3′ apart. (e) N.A. (v) 60 lb./ac. of P_2O_5 at planting. (vi) BO—17 (medium). (vii) Irrigated. (viii) Earthing and interculturing with 5-tyred cultivators. (ix) 42.75″. (x) 11, 12.3.1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 56(124) above.

5. RESULTS :

(i) 17.60 tons/ac. (ii) 2.78 tons/ac. (iii) Treatment differences are highly significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8	M_9	M_{10}
Av. yield	13.59	16.13	19.10	21.16	16.42	18.00	15.68	21.27	17.01	15.79	19.43

S.E./mean = 1.39 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 56(121).**

Site :- Zonal Centre, Jineshwargarh. **Type :- 'M'.**

Object :—To compare the effect of compost with A/S in combination with Super on Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) No. (ii) (a) Sandy loam. (b) N.A. (iii) 27.11.1956. (iv) (a) 2 tractor ploughings and two harrowings with disc and beaming. (b) Flat planting. (c) 60 three-budded setts/row. (d) Rows 3′ apart. (e) Nil. (v) Nil. (vi) BO—14 (medium). (vii) Irrigated. (viii) 9 interculturing operations with 5-tyred cultivator. (ix) 25.65″. (x) 22, 23.1.1958.

2. TREATMENTS :

M_0=Control (no manure) M_1=80 lb./ac. of N as compost+M, M_2=40 lb./ac. of N as compost+40 lb./ac. of N as A/S+M and M_3=80 lb./ac. of N as A/S+M where M=60 lb./ac. of P_2O_5 as Super.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) One row on either side along length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) No. of mature stalks, sucrose % and cane yield. (iv) (a) 1956—1959. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 18.40. (ii) 7.79 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3
Av. yield	15.21	19.73	21.82	16.82

S.E./mean = 3.90 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 58(48).**

Site :- Zonal Centre, Jineshwargarh. **Type :- 'M'.**

Object :—To compare the effect of compost with A/S in combination with Super on Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) Nil. (ii) (a) Light loam. (b) N.A. (iii) 20, 21.3.1958. (iv) (a) 4 ploughings by *desi* plough. (b) Row planting. (c) 60 three-budded setts/row. (d) Rows 3′ apart. (e) Nil. (v) Nil. (vi) BO—17 (medium). (vii) Irrigated. (viii) Once earthing and interculturing with 5-tyred cultivator. (ix) 42.75″. (x) 18 to 20.3.1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 56(121) above.

5. RESULTS :

(i) 15.48 tons/ac. (ii) 1.51 tons/ac. (iii) Treatment differences are highly significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3
Av. yield	12.93	14.80	16.57	17.60

S.E./mean = 0.76 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 59(46).**

Site :- Zonal Centre, Jineshshwargarh. **Type :- 'M'.**

Object :—To compare the effect of compost with A/S in combination with Super on Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai*. (c) Nil. (ii) (a) sandy loam. (b) N.A. (iii) 28, 29.11.1958. (iv) (a) 4 ploughings by *desi* plough. (b) Row planting. (c) 60 three-budded setts/row. (d) Rows 3′ apart. (e) Nil. (v) G.M. with *sanai* 3 weeks before planting. (vi) BO—17 (medium). (vii) Irrigated. (viii) 9 interculturings with 5-tyred cultivator. (ix) 36.25″. (x) 5 to 7.12.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 56(121) on page 689.

4. GENERAL :

(i) Good. (ii) Severe attack of beetle grab. (iii) No. of mature stalks, sucrose % and cane yield. (iv) (a) 1956—1959. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 9.76 tons/ac. (ii) 3.74 tons/ac. (iii) Treatment differences are significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3
Av. yield	7.42	5.77	13.63	12.23

S.E./mean = 1.87 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 57(80).**

Site :- Zonal Centre, Majhaulia. **Type :- 'M'.**

Object :—To find out the dose and time of application of different kinds of nitrogeneous fertilizers for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai*. (c) 2¾ mds./ac. of Super. (ii) (a) Calcareous sandy loam. (b) Refer soil analysis, Majhaulia. (iii) 27.2.1957. (iv) (a) Stubble breaking with disc plough ; 2 ploughings with tractor harrow followed by hinga. (b) Flat method. (c) 60 mds./ac. (d) Row to row 3′. (e) N.A. (v) G.M. with *sanai*. (vi) BO—17 (medium). (vii) Unirrigated. (viii) Fortnightly interculturing with 5-tyred cultivator and earthing up in May. (ix) 29.62″. (x) 24, 25.1.1958.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 56(145) on page 681.

4. GENERAL :

(i) Good. (ii) Nil. (iii) No. of mature stalks, cane yield and juice quality. (iv) (a) 1957—1958. (b) No. (c) Nil (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 25.13 tons/ac. (ii) 2.48 tons/ac. (iii) None of the effects is significant. (iv) Av. yield of sugarcane in tons/ac.

Control = 23.51 tons/ac.

	T_1	T_2	T_3	T_4	T_5	Mean
S_1	25.12	26.04	25.82	25.16	27.03	25.83
S_2	26.52	26.30	23.80	22.63	24.50	24.75
Mean	25.82	26.17	24.81	23.90	25.77	25.29

S.E. of S marginal mean = 0.62 tons/ac.
S.E. of P marginal mean = 0.88 tons/ac.
S.E. of body table or control mean = 1.24 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 58(53).**

Site :- Zonal Centre, Majhaulia. **Type :- 'M'.**

Object :—To find out the dose and time of application of different kinds of nitrogeneous fertilizers for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) G.M. (*sanai*)—Sugarcane. (b) *Sanai*. (c) 2¾ mds./ac. of Super. (ii) (a) Calcareous ; sandy loam. (b) Refer soil analysis, Majhaulia. (iii) 8.2.1958. (iv) (a) Stubble breaking with disc plough two ploughings with tractor harrow followed by *hinga*. (b) Flat method. (c) 60 mds./ac. (d) Row to row 3′. (e) Nil. (v) G.M. with *sanai*. (vi) BO—17 (medium). (vii) Nil. (viii) Interculturing with 5-tyred cultivator and earthing up. (ix) 28.47″. (x) 28.2.1959 to 3.3.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 56(145) on page 681.

4. GENERAL :

(i) Good. (ii Nil. (iii) Germination, height, no. of mature stalks cane yield and sucrose content. (iv) (a) 1957—1958. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 21.11 tons/ac. (ii) 3.69 tons/ac. (iii) None of the effects is significant. (iv) Av. yield of cane in tons./ac.

Control = 19.61 tons/ac.

	T_1	T_2	T_3	T_4	T_5	Mean
S_1	23.51	22.22	22.19	23.32	21.67	22.58
S_2	19.91	22.26	16.42	19.14	22.00	19.95
Mean	21.71	22.24	19.31	21.23	21.88	21.27

S.E. of S marginal mean = 0.82 tons/ac.
S.E. of P marginal mean = 1.30 tons/ac.
S.E. of body of table or control mean = 1.85 tons./ac.

Crop :- Sugarcane. **Ref :- Bh. 57(81).**

Site :- Zonal Centre, Majhaulia. **Type :- 'M'.**

Object :—To test A/S/N as source of N against oilcakes and A/S for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai*. (c) 2¾ mds./ac. of Super. (ii) (a) Calcareous ; sandy loam. (b) Refer soil analysis, Majhaulia. (iii) 1, 2.3.1957. (iv) (a) Stubble breaking with disc plough ; 2 ploughings with tractor harrow followed by *hinga*. (b) Flat method. (c) 60 mds./ac. (d) Row to row 3′. (e) Nil. (v) G.M. with *sanai*. (vi) BO—14. (vii) Unirrigated. (viii) Fornightly interculturing with 5—tyred cultivator, earthing up. (ix) 29.62″. (x) 9, 10.3.1958.

2. TREATMENTS :

M_0=Control (no manure).
M_1=60 lb./ac. of N as A/S+75 lb./ac. of P_2O_5 as Super.
M_2=120 lb./ac. of N as A/S+150 lb./ac. of P_2O_5 as Super.
M_3=60 lb./ac. of N as A/S/N+75 lb./ac. of P_2O_5 as Super.
M_4=120 lb./ac. of N as A/S/N+150 lb./ac. of P_2O_5 as Super.
M_5=60 lb./ac. of N as G.N.C.+75 lb./ac. of P_2O_5 as Super.
M_6=120 lb./ac. of N as G.N.C.+150 lb./ac. of P_2O_5 as Super.
M_7=60 lb./ac. of N as castorcake+75 lb./ac. of P_2O_5 as Super.
M_8=120 lb./ac. of N as castorcake 150 lb./ac. of P_2O_5 as Super.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) 1 row on either side along length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) No. of mature stalk, cane yield and juice quality. (iv) (a) 1957—1959. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 27.08 tons/ac. (ii) 3.23 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8
Av. yield	23.77	27.18	28.17	26.04	29.39	27.44	29.75	25.09	26.93

S.E./mean = 1.62 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 58(52).**

Site :- Zonal Centre, Majhaulia. **Type :- 'M'.**

Object :—To test A/S/N as source of N against oil cake and A/S for Sugarcane.

1. BASAL CONITIONS :

(i) (a) Nil. (b) *Sanai.* (c) 2¾ mds./ac. of Super. (ii) (a) Calcareous sandy loam. (b) Refer soil analysis, Majhaulia. (iii) 9.2.1958, (iv) (a) Stubble breaking with disc plough ; 2 ploughings with tractor harrow followed by *hinga.* (b) Flat method. (c) 60 mds./ac. (d) Row to row 3′. (e) Nil. (v) G.M. with *sanai.* (vi) BO—14 (medium). (vii) Unirrigated. (viii) Fortnightly interculturing with 5-tyred cultivator and earthing up in May. (ix) 28.47″. (x) 13 to 15.3.1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 57(81) on page 691.

5. RESULTS :

(i) 23.21 tons/ac. (ii) 4.35 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of sugarcane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8
Av. yield	18.70	23.69	28.65	21.08	25.38	22.70	23.03	20.90	24.79

S.E./mean = 2.18 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 59(27).**

Site :- Zonal Centre, Majhaulia. **Type :- 'M'.**

Object :—To test A/S/N as source of N against oilcakes and A/S for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) 2¾ mds./ac. of Super. (ii) (a) Calcareous sandy loam. (b) Refer soil analysis, Majhaulia. (iii) 26, 27.2.1959. (iv) (a) Stubble breaking with disc plough ; 2 ploughings by tractor drawn harrow followed by *hinga.* (b) Flat method. (c) 60 mds./ac. (d) Row to row 3′. (e) Nil. (v) G.M. with *sanai.* (vi) BO—14 (medium). (vii) Unirrigated. (viii) Fotnightly interculturing with 5-tyred cultivator and earthing up in May. (ix) 31.52″. (x) 19, 20.1.1960.

2. TREATMENTS :

M_0=Control (no manure).
M_1=60 lb./ac. of N as A/S+75 lb./ac. of P as Super.
M_2=120 lb./ac. of N as A/S+150 lb./ac. of P as Super.
M_3=60 lb./ac. of N as G.N.C.+75 lb./ac. of P as Super.
M_4=120 lb./ac. of N as G.N.C.+150 lb./ac. of P as Super.
M_5=60 lb./ac. of N as Castor cake+75 lb./ac. of P as Super.
M_6=120 lb./ac. of N as Caster cake+150 lb./ac. of P as Super.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) 1 row on either side along length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) No. of mature stalks, cane yield and sucrose %. (iv) (a) 1957—1959. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 24 61 tons/ac. (ii) 2.85 tons/ac. (iii) Treatment differences are highly significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6
Av. yield	21.30	24.35	24.76	22.48	26.52	24.10	28.76

S.E./mean = 1.43 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 57(70).**

Site :- Zonal Centre, Majhaulia. **Type :- 'M'.**

Object :—To compare the effect of compost with A/S in combination with Super on Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Sanai. (c) 2¾ mds./ac. of super. (ii) (a) Calcareous sandy loam. (b) Refer soil analysis, Majhaulia. (iii) 27.10.1957. (iv) (a) 2 ploughings with tractor followed by *hinga*. (b) Flat planting. (c) Rows 3′ apart. (d) 60 mds./ac. (e) Nil. (v) G. M. with *sanai* 3 weeks before planting. (vi) BO—17. (vii) Unirrigated. (viii) Earthing in May and fortnightly interculturing with 5-tyred cultivator. (ix) N.A. (x) 12.3.1959.

2. TREATMENTS :

M_0=Control (no manure), M_1=60 lb./ac. of N as compost+M, M_2=30 lb./ac. of N as compost+30 lb./ac. N as A/S+M and M_3=60 lb./ac. of N as A/S+M, where M=75 lb./ac. of P_2O_5 as Super.

3. DESIGN

(i) R. B. D. (ii) (a) 4. (b) 96′×60.5′. (iii) 6. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) One row on either side along length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) No. of mature stalks, sucrose % and cane yield. (iv) (a) 1957—1958. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 23.56 tons/ac. (ii) 3.66 tons/ac. (iii) Treatment differences are highly significant. (iv) Av. yield of cane on tons/ac.

Treatment	M_0	M_1	M_2	M_3
Av. yield	24.17	18.88	23.99	27.18

S.E./mean = 1.49 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 57(69).**

Site :- Zonal Centre, Majhaulia. **Type :- 'M'.**

Object :—To compare the effect of compost with A/S in combination with Super on Sugarcane.

1, BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) 2¾ mds./ac. of Super. (ii) (a) Alluvial calcareous. (b) Refer soil analysis, Majhaulia. (iii) 25.2.1957. (iv) (a) 4 ploughings by *desi* plough. (b) Flat planting. (c) 60 mds./ac. (d) Rows 3′ apart. (e) Nil. (v) G.M. with *Sanai* 3 weeks before planting. (vi) BO—14. (vii) Unirrigated. (viii) Fortnightly interculturing with 5-tyred cultivator. (ix) N.A. (x) 26.1.1958 to 3.2.1958.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 57(70) on page 693.

5. RESULTS :

(i) 21.79 tons/ac. (ii) 5.52 tons/ac. (iii) Treatments differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3
Av. yield	20.42	22.08	23.29	21.38

S.E./mean = 2.25 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 58(49).**

Site :- Zonal Centre, Majhaulia. **Type :- 'M'.**

Object :—To compare the effect of compost with A/S in combination with Super on Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) 2¾ mds./ac. of Super. (ii) (a) Calcareous sandy loam. (b) Refer soil analysis, Majhaulia. (iii) 19 11.1958. (iv) (a) Stubble breaking with disc plough ; 2 ploughings with tractor harrow followed by *hinga.* (b) Flat method. (c) 60 mds./ac. (d) Row to row 3′. (e) Nil. (v) G.M. with *Sanai.* (vi) BO—17 (medium). (vii) Unirrigated. (viii) Fortnightly interculturing with 5-tyred cultivator ; earthing up. (ix) N.A. (x) 17, 18.1.1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 57(70) on page 693.

5. RESULTS :

(i) 23 37 tons/ac. (ii) 2.28 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3
Av. yield	21.71	23.51	23.21	25.05

S.E./mean = 0.93 tons./ac.

Crop :- Sugarcane. **Ref :- Bh. 55(170).**

Site :- Zonal Centre, Majhaulia. **Type :- 'M'.**

Object :—To compare press mud and molasses with standard manures for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) 3 mds./ac. of Super. (ii) (a) Calcareous. (b) Refer soil analysis, Majhaulia. (iii) 26, 27.1.1955. (iv) (a) N.A. (b) Furrow system of planting. (c) 60 mds./ac. (d) Row to row 3′. (e) Nil. (v) Nil. (vi) BO—21. (vii) Unirrigated. (viii) Weedings are done at an interval of 15 to 20 days. (ix) 70″. (x) 26.2.1956 to 8.3.1956.

2. TREATMENTS :

M_0=Control (no manure), M_1=60 lb./ac. of N as A/S+75 lb./ac. of P_2O_5 as Super, M_2=60 lb./ac. of N as molasses, M_3=120 lb./ac. of N as molasses, M_4=60 lb./ac. of N as pressmud and M_5=120 lb./ac. of N as pressmud.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 5. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) One row on either side along lengh. (vi) Yes.

4. GENERAL :

(i) and (ii) No. (iii) No. of mature stalks count and cane yield. (iv) (a) 1955—1956. (b) and (c) No. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 23.99 tons/ac. (ii) 2.07 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	23.05	24.30	25.92	23.23	25.60	21.84

S.E./mean = 0.93 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 56(18).**

Site :- Zonal Centre, Majhaulia. **Type :- 'M'.**

Object :—To compare press mud and molasses with standard manures for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) 3 mds./ac. of Super. (ii) (a) Calcareous. (b) Refer soil analysis, Majhaulia. (iii) 10.3.1956. (iv) (a) N.A. (b) Furrow system of planting. (c) 60 mds./ac. (d) Row to row 3′. (e) Nil. (v) No. (vi) BO—21. (vii) Irrigated. (viii) Weedings done at interval of 15 to 20 days. (ix) 72.0″. (x) 22 to 24.4.1957.

2. TREATMENT :

M_0=Control (no manure) M_1=60 lb./ac. of N as A/S+75 lb./ac. of P_2O_5 as Super, M_2=100 mds./ac. of pressmud, M_3=200 mds./ac. of pressmud, M_4=100 mds./ac. of molasses and M_5=200 mds./ac. of molasses.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) No. (iii) Height measurement, no. of mature stalks and cane yield. (iv) (a) 1955—1956. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil (vi) and (vii) Nil.

5. RESULTS :

(i) 23.97 tons/ac. (ii) 1.75 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	22.83	24.30	24.22	25.58	22.83	24.04

S.E./mean = 0.71 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 54(113).**

Site :- Zonal Centre, Majhaulia. **Type :- 'M'.**

Object :—To find out the optimum requirement of N, P and K for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) G.M. crop. (c) Super at 3 mds./ac. (ii) (a) Calcareous soil. (b) Refer soil analysis, Majhaulia. (iii) 27.2.1954 to 1.3.1954. (iv) (a) N.A. (b) Furrow system of planting. (c) 60 mds./ac. (d) Row to row 3′. (e) Nil. (v) Nil. (vi) BO—17. (vii) Unirrigated. (viii) Weeding done at the interval of 15 to 20 days. (ix) 40.0″. (x) 27.3.1955 to 5.4.1955.

2. TREATMENTS :

All combinations of (1), (2) and (3).

(1) 3 levels of N as A/S : $N_0=0$, $N_1=40$ and $N_2=80$ lb./ac.
(2) 3 levels of P_2O_5 as Super : $P_0=0$, $P_1=50$ and $P_2=100$ lb./ac.
(3) 3 levels of K_2O as Mur. Pot. : $K_0=0$, $K_1=80$ and $K_2=160$ lb./ac.

3. DESIGN :

(i) 3^3 partially confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) N.A. (iii) 4. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) One row on either side along length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) No. (iii) No. of mature stalk and cane yield. (iv) (a) 1954—1955. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 19.34 tons/ac. (ii) 3.25 tons/ac. (iii) None of the effects is significant. (iv) Av. yield of cane in tons/ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	20.04	18.50	19.45	16.70	19.01	22.28	19.33
N_1	19.38	18.83	17.87	19.12	19.38	17.58	18.69
N_2	21.24	20.48	18.31	20.32	18.53	21.18	20.01
Mean	20.22	19.27	18.54	18.71	18.97	20.35	19.34
P_0	19.70	18.31	18.13				
P_1	19.56	20.56	16.80				
P_2	21.40	18.94	20.70				

S.E. of any marginal mean = 0.54 tons/ac.
S.E. of body of any table = 0.94 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 55(169).**
Centre :- Zonal Centre, Majhaulia. **Type :- 'M'.**

Object :—To find out the optimum requirement of N, P and K for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) G.M. crop. (c) 3 mds./ac. of Super. (ii) (a) Calcareous soil. (b) Refer soil analysis, Majhaulia. (iii) 21 to 27.1.1955. (iv) (a) N.A. (b) Furrow system of planting. (c) 60 mds./ac. (d) Row to row 3′. (e) Nil. (v) Nil. (vi) BO—21. (vii) Unirrigated. (viii) Weeding done at intervals of 15 to 20 days (ix) 70″. (x) 22.2.1956 to 8.3.1956.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 54(113) on page 695.

5. RESULTS :

(i) 23.70 tons/ac. (ii) 2.25 tons/ac. (iii) Main effect of N and interaction N×K alone are significant. (iv) Av. yield of cane in tons/ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	22.84	22.27	23.69	21.73	23.07	24.00	23.93
N_1	21.63	24.01	23.30	22.31	23.53	23.10	22.98
N_2	26.00	25.84	23.75	25.33	24.28	25.97	25.19
Mean	23.49	24.04	23.58	23.12	23.63	24.35	23.70
P_0	21.79	24.34	23.25				
P_1	24.75	22.69	23.44				
P_2	23.92	25.09	24.05				

S.E. of any marginal mean = 0.38 tons/ac.
S.E. of body of any table = 0.65 tons/ac.

* * *

Crop :- Sugarcane. **Ref :- Bh. 57(76).**

Site :- Zonal Centre, Motihari. **Type :- 'M'.**

Object :—To test A/S/N as source of N against oilcakes and A/S for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) 50 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy loam ; calcareous. (b) N.A. (iii) 14.2.1957. (iv) (a) 1 tractor ploughing and twice harrowing by disc harrow. (b) Flat method. (c) 60 mds./ac. (d) Row to row 3′. (e) Nil. (v) G.M. with *sanai.* (vi) BO—17. (vii) Irrigated. (viii) 3 interculturings with 5-tyred cultivator. (ix) 41.07″. (x) 25, 26.2.1958.

2. TREATMENTS :

M_0=Control (no manure).
M_1=60 lb./ac. of N as A/S+75 lb./ac. of P as Super.
M_2=120 lb./ac. of N as A/S+150 lb./ac. of P as Super.
M_3=60 lb./ac. of N as A/S/N+75 lb./ac. of P as Super.
M_4=120 lb./ac. of N as A/S/N+150 lb./ac. of P as Super.
M_5=60 lb./ac. of N as G/N/C+75 lb./ac. of P as Super.
M_6=120 lb./ac. of N as G.N.C.+150 lb./ac. of P as Super.
M_7=60 lb./ac. of N as Castor cake+75 lb./ac. of P as Super.
M_8=120 lb./ac. of N as Castor eake+150 lb./ac. of P as Super.

4. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) 1 row on either side along length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Height, no. of mature stalks, sucrose content and cane yield. (iv) (a) and (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 23.21 tons/ac. (ii) 2.76 tons/ac. (iii) Treatment differences are highly significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8
Av. yield	19.65	21.12	24.50	21.01	27.92	21.45	28.47	20.13	24.68

S.E./mean = 1.38 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 57(78).**

Site :- Zonal Centre, Motihari. **Type :- 'M'.**

Object :—To test A/S/N as source of N against oil cakes and A/S for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) 50 lb./ac. of P_2O_5 as Super. (ii) Sandy loam. (b) N.A. (iii) 26.10.1957. (iv) (a) 4 ploughings by *desi* plough. (b) Flat planting. (c) 60 mds./ac. (d) Row to row 3′. (e) Nil. (v) *Sanai* buried 3 weeks before planting+10 C.L./ac. of F.Y.M. (vi) BO—14 (medium). (vii) Irrigated. (viii) 3 interculturings. (ix) 55.61″. (x) 12 to 17.2.1957.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 57(81) on page 691.

5. RESULTS :

(i) 21.33 tons/ac. (ii) 0.90 ton/ac. (iii) Treatment differences are highly significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8
Av. yield	15.24	20.20	21.49	15.94	22.59	21.05	28.94	19.91	26.63

S.E./mean = 0.45 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 57(68).**

Site :- Zonal Centre, Motihari. **Type :- 'M'.**

Object :—To compare the effect of compost with A/S in combination with Super for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) G.M. crop. (c) 50 lb./ac.of P_2O_5 as super (ii) (a) Sandy loam. (b) N.A. (iii) 15.2.1957. (iv) (a) 1 tractor ploughing and 2 harrowings by disc harrow. (b) Flat method. (c) 60 mds./ac. (d) Row to row 3′. (e) Nil. (v) G.M. applied. (vi) BO—17. (vii) Irrigated. (viii) 3 interculturings with bullock-driven 5-tyred cultivator. (ix) 41.07″. (x) 1.3.1958.

2. TREATMENTS :

M_0=Control (no manure), $M_1=M+60$ lb./ac. of N as compost, $M_2=30$ lb./ac. of N as compost+30 lb./ac. of N as A/S and $M_3=M+60$ lb./ac. of N as A/S, where M=75 lb./ac. of P_2O_5 as Super.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (a) 60.5′×24′. (b) 60.5′×18′. (v) 1 row on either side along length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (c) Germination, tiller count, height, no. of mature stalks, sucrose content and cane yield. (iv) (a) 1959—1958. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 24.31 tons/ac. (ii) 4.02 tons/ac. (iii) Treatment differences are significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3
Av. yield	21.16	23.84	25.82	26·41

S.E./mean = 1.64 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 57(67).**

Site :- Zonal Centre, Motihari. **Type :- 'M'.**

Object :—To compare the effect of compost with A/S in combination with super on Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) 50 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy loam. (b) N.A. (iii) 5.11.1957. (iv) (a) 4 ploughings by *desi* plough. (b) Flat planting. (c) 60 mds./ac. (d) Rows 3′ apart. (e) N.A. (v) *Sanai* buried 3 weeks before planting+10 C.L./ac. of F.Y.M. (vi) BO—17. (vii) Irrigated. (viii) 3 interculturings. (ix) 55.61″. (v) 5 to 7.2.1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 57(68) on page 698.

5. RESULTS :

(i) 34.66 tons/ac. (ii) 3.68 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3
Av. yield	32.32	35.08	36.95	34.27

S.E./mean = 1.50 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 58 (44)**

Site :- Zonal Centre, Motihari. **Type :- 'M'.**

Object :—To compare the effect of compost with A/S in combination with Super on Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *sanai.* (c) 50 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy loam (Calcareous). (b) N. A. (iii) 3.11.1958. (iv) (a) 4 ploughings by *desi* plough. (b) Flat planting. (c) 60 mds/ac. (d) Rows 3′ apart. (e) Nil. (v) *Sanai* buried 3 weeks before planting by disc plough+20 C.L./ac. of F.Y.M. (vi) BO—17 (medium). (vii) Irrigated. (viii) Earthing in June 6 times and inter-culturing by 5-tyred cultivator. (ix) 51.85″ (x) 25.1.1960.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 57(68) on page 698.

4. GENERAL :

(i) Good. Slight lodging. (ii) Nil. (iii) No. of mature stalks, sucrose % and cane yield. (iv) (a) 1957-1958. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 21.32 tons/ac. (ii) 6.42 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3
Av. yield	19.32	20.42	23.73	21.82

S.E./mean = 2.62 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 54(145)**

Site :- Zonal Centre, Motihari. **Type :- 'M'.**

Object :—To find the optimum requirements of N, P and K for sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai*. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 30.10.1954. (iv) (a) 5 ploughings. (b) Flat method. (c) 60 mds/ac. (d) Row to row 3′. (e) Nil. (v) G. M. with *sanai.* (vi) BO—21. (vii) Irrigated. (viii) 2 weedings, 6 interculturings and earthing up. (ix) 48.64″. (x) 5.5.1956.

2. TREATMENTS :

Same as in expt. no. 54(113) on page 695.

3. DESIGN :

(i) 3^3 partially confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) N.A. (iii) 2. (iv) (a) 60½′×24′. (b) 60½×18′. (v) One row on either side along the length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Cane yield. (iv) (a) 1954-1956. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 31.41 tons/ac. (ii) 2.74 tons/ac. (iii) Main effect of N and the interaction N×P×K alone are significant. (iv) Av. yield of cane in tons/ac.

	P_0	P_1	P_2	Mean	K_0	K_1	K_2
N_0	27.49	30.52	31.09	29.70	29.41	29.97	29.73
N_1	28.49	32.46	33.29	31.41	29.48	32.09	32.67
N_2	31.30	35.69	32.35	33.11	35.32	34.71	29.31
Mean	29.09	32.89	32.24	31.41	31.40	32.26	30.57
K_0	25.85	31.87	36.48				
K_1	30.15	35.51	31.11				
K_2	31.28	31.29	29.13				

S.E. of any marginal mean = 0.65 tons/ac.
S.E. of body of any table = 1.12 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 56(58).**
Site :- Zonal Centre, Motihari. **Type :- 'M'.**

Object :—To find out the optimum requirements of N, P and K for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) G.M. crop. (c) 50 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy loam. (b) N.A. (iii) 25.2 1956. (iv) (a) 1 deep ploughing and 2 harrowings. (b) Planting with senior plough. (c) 60 mds /ac. (d) Row to row 3′. (vi) Nil. (vi) BO –21 (early). (vii) Irrigated. (viii) 4 intercultures, earthing and weeding. (ix) 85.10″, (x) 19.3.1957.

2. TREATMENTS :

Same as in expt. no. 54(113) on page 695.

3. DESIGN :

(i) 3^3 partially confd. (ii) (a) and (b) 9 plots/block ; 3 blocks/replication. (iii) 2. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) 1 row on either side along length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Top-borer incidence—no control measures taken. (iii) Height measurements, no. of mature stalks and cane yield. (iv) (a) 1954—1956. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 24.07 tons/ac. (ii) 3.58 tons/ac. (iii) None of the effects is significant. (iv) Av. yield of cane in tons/ac.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	25.76	24.81	20.88	21.95	21.65	27.86	23.82
N_1	23.34	25.54	23.96	23.41	24.77	24.66	24.28
N_2	22.24	20.87	29.26	21.69	22.82	27.85	24.12
Mean	23.78	23.74	24.70	22.35	23.08	26.79	24.07
K_0	20.99	23.88	22.20				
K_1	23.16	22.09	23.97				
K_2	27.19	25.26	27.93				

S.E. of any marginal mean = 0.84 tons/ac.
S.E. of body of any table = 1.46 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 57(77).**
Site :- Zonal Centre, Motihari. **Type :- 'M'.**

Object :—To find out the dose and time of application of different kinds of nitrogeneous fertilizers for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) 50 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy loam. (b) N.A. (iii) 25.10.1957. (iv) (a) Burying *sanai* by disc harrow and 4 ploughings by *desi* plough. (b) Flat planting. (c) 60 mds./ac. (d) Rows 3′ apart. (e) Nil. (v) 10 C.L./ac. of F.Y.M.+G.M. with *sanai*+75 lb./ac. of P_2O_5 as Super at planting. (vi) BO—17. (vii) Irrigated. (viii) Hoeing and earthing twice. (ix) 55.61″. (x) 1 to 7.3.1959.

2. TREATMENTS :

M_0=Control (no manure).
M_1=60 lb./ac. of N as A/S at planting.
M_2=60 lb./ac. of N as A/S/N at planting.
M_3=45 lb./ac. of N as A/S at planting+15 lb./ac. of N as A/S at earthing.
M_4=45 lb./ac. of N as A/S/N at planting+15 lb./ac. of N as A/S/N at earthing.
M_5=30 lb./ac. of N as A/S at planting+30 lb./ac. of N as A/S at earthing.
M_6=30 lb./ac. of N as A/S/N at planting+30 lb./ac. of N as A/S/N at earthing.
M_7=15 lb./ac. of N as A/S at planting+45 lb./ac. of N as A/S at earthing.
M_8=15 lb./ac. of N as A/S/N at planting+45 lb./ac. of N as A/S/N at earthing.
M_9=60 lb./ac. of N as A/S at earthing.
M_{10}=60 lb./ac. of N as A/S/N at earthing.

3. DESIGN :

(i) R.B.D. (ii) (a) 11. (b) N.A. (iii) 4. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) 1 row on either side along length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) No. of mature stalks, sucrose % and cane yield. (iv) (a) and (b) No. (c) Nil. (v) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 31.18 tons/ac. (ii) 10.44 tons/ac. (iii) Treatment differences are highly significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8	M_9	M_{10}
Av. yield	24.68	29.93	33.72	33.24	35.04	32.51	36.55	33.17	26.04	25.53	32.58

S.E./mean = 5.22 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 57(92).**

Site :- Zonal Centre, Motihari. **Type :- 'M'.**

Object :—To find out the dose and time of application of different kinds of nitrogeneous fertilizers for Sugarcane.

1. BASAL CONDITIONS

(i) (a) Nil. (b) *sanai.* (c) 50 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy loam (calcareous). (b) N.A. (iii) 13.2.1957. (iv) (a) 1 tractor ploughing and 2 harrowings by disc harrow. (b) Flat method. (c) 60 mds./ac. (d) Rows 3′ apart. (e) Nil. (v) G.M. with *sanai*+75 lb./ac. of P_2O_5 as Super at planting. (vi) BO—17. (vii) Irrigated. (viii) 3 interculturing operations with 5-tyred cultivator. (ix) 41.07″. (x) 22 to 24.2.1958.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 57(77) on page 701.

5. RESULTS :

(i) 22.16 tons/ac. (ii) 3.82 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8	M_9	M_{10}
Av. yield	16.38	21.93	23.58	23.29	21.16	23.91	25.16	23.44	21.41	22.44	21.05

S.E./mean = 1.91 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 54(119).**

Site :- Zonal Centre, Motihari. **Type :- 'M'.**

Object :—To study the effect of phosphate manuring of G.M. crop on subsequent Sugarcane crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai* and soyabean. (c) As per treatments. (ii) (a) Sandy loam (calcareous). (b) N.A. (iii) 24.10.1954. (iv) (a) 4 ploughings by *desi* plough. (b) Flat method. (c) 60 mds./ac. (d) Rows 3′ apart. (e) Nil. (v) 10 C.L./ac of F.Y.M. before planting. (vi) BO—11 (medium). (vii) Irrigated. (viii) 3 interculturings with cultivator. (ix) 52.02″. (x) 14 to 18.3.1956.

2. TREATMENTS :

All combinations of (1) and (2).

(1) 2 G.M. crops : G_1=*sanai* and G_2=soyabean.
(2) 6 levels of P_2O_5 as Super : $P_0=0$, $P_1=50$, $P_2=100$, $P_3=150$, $P_4=200$ and $P_5=250$ lb./ac.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 6. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) 1 row on either side along length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) No. of mature stalks, sucrose % and cane yield. (iv) (a) 1954—1955 (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 29.67 tons/ac. (ii) 5.17 tons/ac. (iii) None of the effects is significant. (iv) Av. yield of cane in tons/ac.

	P_0	P_1	P_2	P_3	P_4	P_5	Mean
G_1	26.19	27.73	26.92	31.52	33.94	30.78	29.51
G_2	28.76	28.91	30.82	32.58	28.06	29.86	29.83
Mean	27.48	28.32	28.87	32.05	31.00	30.32	29.67

S.E. of P marginal mean = 1.49 tons/ac.
S.E. of G marginal mean = 0.86 tons/ac.
S.E. of body of table = 2.11 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 55(59).**

Site :- Zonal Centre, Motihari. **Type :- 'M'.**

Object :—To study the effect of phosphate manuring of G.M. crops on yield of subsequent Sugarcane crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) G.M. crop. (c) As per treatments. (ii) (a) Clayey loam. (b) N.A. (iii) 24.10.1955. (iv) (a) Deep ploughing, two harrowings before planting cane. (b) Planted with senior ridger. (c) 60 mds./ac. (d) Row to row 3′. (e) Nil. (v) Nil. (vi) BO—17. (vii) Irrigated. (viii) 4 interculturings, earthing and weeding. (ix) 85.10″. (x) 9.3.1957.

2. TREATMENTS to 4. GENERAL :

Same as expt. no. 54(119) on page 702..

5. RESULTS :

(i) 29.78 tons/ac. (ii) 5.58 tons/ac. (iii) None of the effects is significant. (iv) Av. yield of cane in tons/ac.

	P_0	P_1	P_2	P_3	P_4	P_5	Mean
G_1	30.83	29.62	32.00	36.37	32.22	28.55	31.60
G_2	27.82	24.22	27.63	23.38	26.75	27.86	26.28
Mean	29.33	26.92	29.82	29.88	29.49	28.21	28.94

S.E. of G marginal mean = 0.93 tons/ac.
S.E. of P marginal mean = 1.61 tons/ac.
S.E. of body of table = 2.28 tons./ac.

Crop :- Sugarcane. **Ref :- Bh. 56(60).**

Site :- Zonal Centre, Motihari. **Type :- 'M'.**

Object :—To compare the effect of Super and Dical. phos. on Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) G.M. crop. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 2.3.1956. (iv) (a) One deep ploughing, twice harrowing before planting. (b) Planted with senior ridger. (c) 60 mds./ac. with three-budded setts. (d) Row to row 3′. (e) Nil. (v) Nil. (vi) BO—17. (vii) Irrigated. (viii) 4 interculturings, earthing and weeding. (ix) 85.10″. (x) 17.3.1957.

2. TREATMENTS :

M_0=Control (no manure).
M_1=60 lb./ac. of N as A/S+75 lb./ac. of P_2O_5 as Super.
M_2=60 lb./ac. of N as A/S+75 lb./ac. of P_2O_5 as Dical. phos.
M_3=60 lb./ac. of N as castorcake+75 lb./ac. of P_2O_5 as Super.
M_4=60 lb./ac. of N as castorcake+75 lb./ac. of P_2O_5 as Dical. phos.
M_5=30 lb./ac. of N as castorcake+75 lb./ac. of P_2O_5 as Super+30 lb./ac. of N as A/S.
M_6=30 lb./ac. of N as A/S+75 lb./ac. of P_2O_5 as Dical. phos.+30 lb./ac. of N as castorcake.

3. DESIGN :

(i) R.B.D. (ii) (a) and (b) 7. (iii) 3. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) One row on either side along length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Cane yield. (iv) (a) to (c) No. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 18.30 tons/ac. (ii) 3.57 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Trreatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6
Av. yield	19.23	19.93	16.81	17.54	18.17	18.17	18.24

S.E./mean = 2.06 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 56(57).**

Site :- Zonal Centre, Motihari. **Type :- 'M'.**

Object :—To compare the effects of A/S and A/N on sugarcane yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) G.M. crop. (c) 50 lb./ac. of P_2O_5. (ii) (a) Sandy loam. (b) N.A. (iii) 20.2.1956. (iv) (a) One deep ploughing, two harrows before planting. (b) Planting with senior ridger. (c) 60 mds./ac. with three-budded setts. (d) Row to row 3′. (e) Nil. (v) Nil. (vi) BO—17. (vii) Irrigated. (viii) 4 intercultures, one earthing and weeding. (ix) 85.10″. (x) 29.3.1957.

2. TREATMENTS :

All combinations of (1) and (2)+a control.
(1) 3 levels of N : N_1=60, N_2=80 and N_3=120 lb./ac.
(2) 2 sources of N : S_1=A/S and S_2=A/N.

3. DESIGN :

(i) R.B.D. (ii) (a) and (b) 7. (iii) 4. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) One row on either side along length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Cane yield. (iv) (a) and (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 20.99 tons/ac. (ii) 4.05 tons/ac. (iii) None of the effects is significant. (iv) Av. yield of cane in tons/ac.

Control = 19.16 tons/ac.

	N_1	N_2	N_3	Mean
S_1	21.18	19.16	21.47	20.60
S_2	21.69	22.53	21.73	21.98
Mean	21.44	20.85	21.60	21.29

S.E. of S marginal mean = 1.17 tons/ac.
S.E. of N marginal mean = 1.43 tons/ac.
S.E. of body of table or control mean = 2.03 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 55(213).**

Site :- Zonal Centre, Motipur. **Type :- 'M'.**

Object :—To study the effect of phosphate manuring of G.M. crops on subsequent Sugarcane crop.

1. BASAL CONDITIONS :

(i) (a) G.M. crops—Sugarcane—G.M. crops. (b) *Sanai*+Soyabean. (c) As per treatments. (ii) (a) Calcareous soil. (b) Refer soil analysis, Motipur. (iii) 13.2.1955. (iv) (a) 4 ploughings, harrowing and beaming. (b) Flat method. (c) 60 mds./ac. (d) Row to row 3′. (e) Nil. (v) Nil. (vi) BO—21 (medium). (vii) Unirrigated. (viii) Interculturing with 5-tyred cultivator and earthing up. (ix) 53.84″. (x) 23 to 25.12.1955.

2. TREATMENTS :

Same as in expt. no. 54(119) on page 702.

3. DESIGN :

(i) R.B D. (ii) (a) 12. (b) N.A. (iii) 4. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) One row on either side along length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) No. of mature stalks and cane yield. (iv) (a) and (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 26.34 tons/ac. (ii) 1.35 tons/ac. (iii) Main effects of G and P are highly significant. Interaction G×P is significant. (iv) Av. yield of cane in tons/ac.

	P_0	P_1	P_2	P_3	P_4	P_5	Mean
G_1	22.87	25.62	28.19	29.94	30.21	31.77	28.10
G_2	18.27	20.39	23.23	26.36	28.83	30.40	24.58
Mean	20.57	23.01	25.71	28.15	29.52	31.09	26.34

S.E. of G marginal mean = 0.28 tons/ac.
S.E. of P marginal mean = 0.48 tons/ac.
S.E. of body of table = 0.68 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 56(138).**
Site :- Zonal Centre, Motipur. **Type :- 'M'.**

Object :—To test A/S/N as source of N against oilcakes and A/S for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) Nil. (ii) (a) Sandy loam (calcareous) (b) Refer soil analysis, Motipur. (iii) 28.11.1956. (iv) (a) One tractor ploughing and one disc harrowing. (b) Flat method. (c) 60 mds./ac. (d) Rows 3′ apart. (e) Nil. (v) G.M. with *sanai.* (vi) BO—14 (medium). (vii) Irrigated. (viii) 3 interculturings with 5-tyred cultivator and earthing up. (ix) 42.5″. (x) 7 to 10.4.1958.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 57(81) on page 691.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Height, no. of mature stalks, cane yield and sucrose content. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 22.74 tons/ac. (ii) 2.12 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8
Av. yield	21.67	22.66	25.16	23.88	24.43	20.39	22.66	20.64	23.21

S.E./mean = 1.06 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 57(94).**

Site :- Zonal Centre, Motipur. **Type :- 'M'.**

Object :—To test A/S/N as source of N against oilcakes and A/S for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Sugarcane. (c) 60 lb./ac. of N+75 lb./ac. of P_2O_5. (ii) (a) Calcareous ; sandy loam. (b) Refer soil analysis, Motipur. (iii) 30.10.1957. (iv) (a) Bullock and tractor ploughings and harrowing. (b) Flat method. (c) 60 md./ac. (d) Rows 3′ apart. (e) Nil. (v) Nil. (vi) BO—14 (medium). (vii) Irrigated. (viii) Hoeing and earthing. (ix) 53.57″. (x) 27.1.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 57(81) on page 691.

4. GENERAL :

(i) Good. (ii) Nil. (iii) No. of mature stalks, height, cane yield and juice content. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 21.33 tons/ac. (ii) 0.90 tons/ac. (iii) Treatment differences are highly significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8
Av. yield	15.24	20.20	21.49	15.90	22.59	21.23	28.65	20.02	26.63

S.E./mean = 0.45 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 58(69).**

Site :- Zonal Centre, Motipur. **Type :- 'M'.**

Object :—To test A/S/N as source of N against oilcakes and A/S for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai*. (c) Nil. (ii) (a) Calcareous ; sandy loam. (b) Refer soil analysis, Motipur. (iii) 29.10.1958. (iv) (a) 2 disc ploughings, 1 harrow and 1 *hinga*. (b) Flat method. (c) 60 mds./ac. (d) Rows 3′ apart. (e) Nil. (v) G.M. with *Sanai*. (vi) BO—14 (medium). (vii) Irrigated. (viii) 3 interculturings with 5-tyred cultivator and earthing up in June. (ix) 30.20″. (x) 21.1.1960.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 57(81) on page 691.

4. GENERAL :

(i) Good. (ii) Nil. (iii) No. of mature stalks, height, cane yield and juice quality. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 23.07 tons/ac. (ii) 0.63 tons/ac. (iii) Treatment differences are significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8
Av. yield	21.67	20.28	23.21	21.49	24.50	22.22	27.00	21.75	25.49

S E./mean = 0.32 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 56 (136).**

Site :- Zonal Centre, Motipur. **Type :- 'M'.**

Object :—To compare the effect of compost with A/S in combination with Super on Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *sanai.* (c) Nil. (ii) (a) Sandy loam (calcareous). (b) Refer soil analysis, Motipur. (iii) 26.11.1956. (iv) (a) 1 tractor ploughing, 2 disc harrowings. (b) Flat method. (c) 60 mds/ac. (d) Rows 3′ apart. (e) Nil. (v) G. M. with *sanai.* (vi) BO—14 (medium). (vii) Irrigated. (viii) 3 interculturings with 5-tyred cultivator, earthing up with ridging plough before monsoon. (ix) 42.5″ (x) 13.1.1958.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 57 (68) on page 698.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Height, no. of mature stalks, cane yield and sucrose content. (iv) (a) 1956-1958. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 23.03 tons/ac. (ii) 3.37 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3
Av. yield	21.41	22.52	24.68	23.51

S.E./mean = 1.38 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 57 (93).**

Site :- Zone Centre, Motipur. **Type :- 'M'.**

Object :—To compare the effect of compost with A/S in combination with Super on Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Sugarcane. (c) 60 lb./ac. of N+75 lb./ac. of P_2O_5. (ii) (a) Calcareous ; sandy loam. (b) Refer soil analysis, Motipur. (iii) 28.10.1957. (iv) (a) 4 bullock ploughings. (b) Flat method. (c) 60 mds./ac. (d) Rows 3′ apart. (e) Nil. (v) N. A. (vi) BO—17 (medium). (vii) Irrigated. (viii) Earthing and harrowing. (ix) 53.57″. (x) 6.2.1959.

2. TREATMENTS and 3. DESIGN :

Same as in the expt. no. 57 (68) on page 698.

4. GENERAL :

(i) Good. (ii) Nil. (iii) No. of mature stalks, sucrose % and cane yield. (iv) (a) 1956-1958. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 17.70 tons/ac. (ii) 1.19 tons/ac. (iii) Treatment differences are highly significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3
Av. yield	14.69	16.57	19.21	20.31

S.E./mean = 0.49 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 58(65).**

Site :- Zonal Centre, Motipur. **Type :- 'M'.**

Object :—To compare the effect of compost with A/S in combination with Super on Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) Nil. (ii) (a) Calcareous ; sandy loam. (b) Refer soil analysis, Motipur. (iii) 1.11.1958. (iv) (a) Burying of *sanai*, 2 disc plough, 1 harrow, 1 *hinga.* (b) Flat method. (c) 60 mds./ac. (d) Rows 3′ apart. (e) Nil. (v) G.M. with *sanai.* (vi) BO—17 (medium). (vii) Irrigated. (viii) 3 interculturings with 5-tyred cultivator and earthing up. (ix) 30.20″. (x) 27.1.1960.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 57(68) on page 698.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Height, no. of mature stalks, cane yield and juice content. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 18.27 tons/ac. (ii) 0 92 tons/ac. (iii) Treatment differences are highly significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3
Av. yield	11.31	16.79	29.27	15.72

S.E./mean = 0.38 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 55(212).**

Site :- Zonal Centre, Motipur. **Type :- 'M'.**

Object :—To find out the optimum requirements of N, P and K for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Maize. (c) Nil. (ii) (a) Calcareous soil. (b) Refer soil analysis, Motipur. (iii) 3.2.1955. (iv) (a) 4 ploughings, harrowings and beamings. (b) Flat method. (c) 6 mds/ac. (d) Row to row 3′. (e) Nil. (v) Nil. (vi) BO—21 (medium). (vii) Irrigated. (viii) Interculturing with 5-tyred cultivator and earthing up with ridger. (ix) 53.91″. (x) 8 to 16.1.1956.

2. TREATMENTS :

All combinations of (1), (2) and (3)
(1) 3 levels of N as A/S : $N_0=0$, $N_1=40$ and $N_2=80$ lb./ac.
(2) 3 levels of P_2O_5 as Super : $P_0=0$, $P_1=50$ and $P_2=100$ lb./ac.
(3) 3 levels of K_2O as Mur. Pot. $K_0=0$, $K_1=80$ and $K_2=160$ lb./ac.

3. DESIGN :

(i) 3^3 partially confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) N.A. (iii) 4. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) One row on the either side along length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Borer attack. (iii) Mature stalks and cane yield. (iv) (a) 1955—1956. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 30.36 tons/ac. (ii) 1.32 tons/ac. (iii) Main effects of N, P and K and interactions N×P, P×K and N×K are significant. (iv) Av. yield of cane in tons /ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	28.30	28.65	30.01	27.98	28.42	30.56	28.99
N_1	32.01	28 71	30.28	28.94	30.22	31.84	30.33
N_2	30.11	32.58	32.58	30.81	31.84	32.62	31.76
Mean	30.14	29.98	30.96	29.24	30.16	31.67	30.36
P_0	29.28	29.30	29.15				
P_1	30.17	28.14	32.18				
P_2	30.97	32.51	31.54				

S.E. of any marginal mean = 0.22 tons/ac.
S.E. of body of any table = 0.38 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 56(237).**
Site :- Zonal Centre, Motipur. **Type :- 'M'.**

Object :—To find out the optimum requirements of N, P and K for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 2½ mds/ac. of Super. (ii) (a) Calcareous ; sandy loam. (b) Refer soil analysis, Motipur. (iii) 16.3.56. (iv) (a) 5 ploughings. (b) Flat method. (c) N.A. (d) Row to row 3′. (e) N.A. (v) Nil. (vi) BO—11 (early). (vii) Unirrigated. (viii) Hoeing and earthing up. (ix) 67.35″. (x) 5, 7.3.1957.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 55(212) on page 708.

4 GENERAL :

(i) Good. (ii) Nil. (iii) Cane yield. (iv) (a) 1955—1956. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 25.76 tons/ac. (ii) 8.74 tons/ac. (iii) None of the effects is significant. (iv) Av. yield of sugarcane in tons/ac.

	K_0	K_1	K_2	Mean	P_0	P_1	P_2
N_0	21.76	22.52	22.52	22.27	19.46	23.73	23.61
N_1	24.95	26.03	24.93	25.30	23.66	26.13	26.13
N_2	28.25	30.04	30.87	29.72	27.12	30.62	31.41
Mean	24.99	26.20	26.11	25.76	23.41	26.83	27.05
P_0	23.56	22.54	24.14				
P_1	25.52	27.72	27.24				
P_2	25.88	28.32	26.94				

S.E. of any marginal mean = 1.46 tons/ac.
S.E. of body of any table = 2.52 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 56(137).**
Site :- Zonal Centre, Motipur. **Type :- 'M'.**

Object :—To find out the dose and time of application of different kinds of nitrogeneous fertilizers for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *sanai.* (c) Nil. (ii) (a) Sandy loam ; calcareous. (b) Refer soil analysis, Motipur. (iii) 29.11.1956. (iv) (a) Burying of *sanai,* one tractor ploughing, 2 tractor harrowings. (b) Flat method. (c) 60 mds/ac. (d) Rows 3′ apart. (e) Nil. (v) Nil. (vi) BO—17 (medium). (vii) Irrigated. (viii) 3 interculturings with 5-tyred cultivator and earthing up with ridging plough. (ix) 42.5″. (x) 31.1.1958 to 4.2.1958.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 57(77) on page 701.

4. GENERAL :

(i) Good. (ii) Nil. (iii) No. of mature stalks, cane yield and sucrose content. (iv) (a) 1956—1957. (b) No. (c) Nil. (v) (a) Others zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 22.70 tons/ac. (ii) 2.67 tons/ac. (iii) Treatment differences are significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8	M_9	M_{10}
Av. yield	18.81	24.06	20.64	28.65	26.78	23.95	24.87	22.48	20.94	19.03	19.47

S.E./mean = 1.34 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 57(96).**

Site :- Zonal Centre, Motipur. **Type :- 'M'.**

Object :—To find out the dose and time of application of different kinds of nitrogeneous fertilizers for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Sugarcane. (c) 60 lb./ac. of N and 75 lb./ac. of P_2O_5. (ii) (a) Calcareous ; sandy loam. (b) Refer soil analysis, Motipur. (iii) 26.10.57. (iv) (a) Bullock and tractor ploughing and harrowing. (b) Flat method. (c) 60 mds/ac. (d) Rows 3′ apart. (e) Nil. (v) 75 lb./ac. of P_2O_5 as Super. (vi) BO—14 (medium). (vii) Irrigated. (viii) 4 interculturings. (ix) 53.57″. (x) 5, 6.1.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 57(77) on page 701.

4. GENERAL :

(i) Good. (ii) Nil. (iii) No. of mature stalks, cane yield and juice content. (iv) (a) 1956—1959. (b) and (c) No. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 25.50 tons/ac. (ii) 2.25 tons/ac. (iii) Treatment differences are highly significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8	M_9	M_{10}
Av. yield	20.31	27.55	24.43	29.57	30.19	26.15	23.62	24.68	22.52	22.66	28.87

S.E./mean = 1.13 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 54(93).**

Site :- Zonal Centre, Narkatiaganj. **Type :- 'M'.**

Object :—To find out the optimum requirments of N, P and K for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Sugarcane. (c) 6 mds. of castorcake+1¼ mds. of A/S+1¼ mds. of Super. (ii) (a) Sandy loam. (b) Refer soil analysis, Narkatiaganj. (iii) 2, 3.2.1954. (iv) (a) Ploughing twice with mould board. (b) Ridge and furrow method of planting. (c) 14400 three-budded setts/ac. (d) Row to row 3′. (e) N.A. (v) Nil. (vi) CO—453 (medium). (vii) N.A. (viii) Earthing up with ridger. (ix) 65.24″. (x) 18 to 20.1.1955.

2. TREATMENTS :

Same as in expt. no. 55(212) on page 708.

3. DESIGN :

(i) 3^3 partially confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) 60.5′×216′. (iii) 2. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) One row on each side along length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) No. of mature stalks and cane yield. (iv) (a) 1954—1955. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 33.64 tons/ac. (ii) 2.95 tons/ac. (iii) Main effect of K is significant and of N is highly significant. No other effect is significant. (iv) Av. yield of cane in tons/ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	29.09	31.00	28.14	29.99	27.38	30.87	29.41
N_1	32.73	37.07	33.86	35.09	33.60	34.97	34.55
N_2	37.66	37.45	35.80	37.38	35.83	37.71	36.97
Mean	33.16	35.17	32.60	34.15	32.27	34.52	33.64
P_0	32.47	37.07	32.91				
P_1	33.05	32.86	30.89				
P_2	33.97	35.59	33.99				

S.E. of any marginal mean = 0.70 tons/ac.
S.E. of body of any table = 1.20 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 55(205).**

Site :- Zonal Centre, Narkatiaganj. **Type :- 'M'.**

Object :—To find the optimum requirements of N, P and K for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Sannhemp. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Narkatiaganj. (iii) 8.2.1955. (iv) (a) Twice ploughed with mould board plough. (b) Ridged furrow method of planting. (c) 14.400 three-budded setts/ac. (d) Rows 3′ apart. (e) Nil. (v) G. M. with Sannhemp. (vi) BO—21 (early). (vii) Irrigated. (viii) Earthing. (ix) 29.47″. (x) 7 to 9.12.1955.

2. TREATMENTS :

Same as in expt. no. 55(212) on page 708.

3. DESIGN :

(i) 3^3 partially confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) N.A. (iii) 2. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) One row on either side. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) No. of mature stalks. sucrose % and cane yield. (iv) (a) 1954—1956. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 23.33 tons/ac. (ii) 1.30 tons/ac. (iii) Main effect of N alone is significant. (iv) Av. yield of cane in tons/ac.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	21.76	22.22	19.54	20.90	23.81	19.21	21.31
N_1	23.66	19.89	23.28	22.79	22.71	21.33	22.28
N_2	23.29	28.86	27.03	27.17	26.91	25.10	26.39
Mean	22.90	23.79	23.28	23.62	24.48	21.88	23.33
K_0	24.30	23.25	23.31				
K_1	24.15	25.56	23.72				
K_2	20.26	22.56	22.81				

S.E. of any marginal mean = 0.31 tons/ac.
S.E. of body of any table = 0.53 tons/ac.

* * *

Crop :- Sugarcane. **Ref :- Bh. 57(89).**
Site :- Zonal Centre, Narkatiaganj. **Type :- 'M'.**

Object :—To compare the effect of compost with A/S in combination with Super on Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) 17.9 lb./ac. of P_2O_5 as Super. (ii) (a) Non-calcareous ; sandy loam. (b) Refer soil analysis, Narkatiaganj. (iii) 14.11.1957. (iv) (a) Stubble breaking with disc. ploughing, 2 ploughings with tractor drawn harrow plough followed by *hinga* each time. (b) Flat method. (c) 60 mds./ac (d) Rows 3′ apart. (e) Nil. (v) G.M. with *Sanai.* (vi) BO—17. (vii) Unirrigated. (viii) Four interculturing operation with 5-tyred cultivator and earthing up. (ix) 65.33″. (x) 24, 25.2.1959.

2. TREATMENTS :

M_0=Control (no manure), M_1=M+60 lb./ac. of N as compost, M_2=M+30 lb./ac. of N as compost+30 lb./ac. of N as A/S and M_3=M+60 lb./ac. of as N as A/S.
M=75 lb./ac. of P_2O_5 as Super.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) 96′×60.5′. (iii) 6. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) One row on either side along length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) No. of mature stalks, sucrose % and cane yield. (iv) (a) 1957—1958. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 29.64 tons/ac. (ii) 2.76 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3
Av. yield	28.61	29.24	30.71	30.01

S.E./mean = 1.13 tons/ac.

* * *

Crop :- Sugarcane. **Ref :- Bh. 58(63).**
Site :- Zonal Centre, Narkatiaganj. **Type :- 'M'.**

Object :—To compare the effect of compost with A/S in combination with Super on Sugarcane.

1. BASAL CONDITIONS :

(i) Nil. (b) *Sanai.* (c) 17.9 lb./ac. of P_2O_5 as Super. (ii) (a) Non-calcareous ; sandy loam. (b) Refer soil analysis, Narkatiaganj. (iii) 11.11.1958. (iv) (a) Stubble breaking with disc ploughing, 2 tractor ploughings followed by *hinga* each time. (b) Flat method. (c) 60 mds./ac. (d) Rows 3′ apart. (e) N.A. (v) G.M. with *sanai.* (vi) BO—17 (medium). (vii) Irrigated. (viii) Three interculturing operations with 5-tyred cultivator and earthing in June. (ix) 41.38″. (x) 11 to 13.2.1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 57(89) on page 712.

5. RESULTS :

(i) 27.92 tons/ac. (ii) 4.31 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3
Av. yield	25.93	27.73	29.53	27.48

S.E./mean = 1.76 tons/ac.

* * *

Crop :- Sugarcane. **Ref :- Bh. 57(87).**

Slte :- Zonal Centre, Narkatiaganj. **Type :- 'M'.**

Object :—To test A/S/N as source of N against oilcakes and A/S for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) 17.9 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy loam ; non-calcareous. (b) Refer soil analysis, Narkatiaganj. (iii) 22, 23.11.1957. (iv) (a) Stubble breaking with disc plough, ploughings by tractor drawn harrow plough followed by *hinga* each time. (b) Flat method. (c) 60 mds./ac. (d) Rows 3′ apart. (e) Nil. (v) G.M. with *Sanai.* (vi) BO—14 (medium). (vii) Unirrigated. (viii) Three interculturing operations with 5-tyred cultivator and earthing up in May. (ix) 63.47″. (x) 4.1.1959.

2. TREATMENTS :

M_0=Control (no manure).
M_1= 60 lb./ac. of N as A/S+ 75 lb./ac. of P_2O_5 as Super.
M_2=120 lb./ac. of N as A/S+150 lb./ac. of P_2O_5 as Super.
M_3= 60 lb./ac. of N as A/S/N+ 75 lb./ac. of P_2O_5 as Super.
M_4=120 lb./ac. of N as A/S/N+150 lb./ac. of P_2O_5 as Super.
M_5= 60 lb./ac. of N as G.N.C.+75 lb /ac. of P_2O_5 as Super.
M_6=120 lb./ac. of N as G.N.C.+ 150 lb./ac. of P_2O_5 as Super.
M_7= 60 lb./ac. of N as castorcake+ 75 lb./ac. of P_2O_5 as Super.
M_8=120 lb./ac. of N as castorcake+150 lb./ac. of P_2O_5 as Super.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) 216′×60.5′. (iii) 4. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) One row on each side along length. (vi) Yes.

4. GENERAL :

(i) Partial lodging. (ii) Nil. (iii) No. of tillers, no. of mature stalks, sucrose % and sugarcane yield. (iv) (a) 1957—1958. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) Heavy rains on 8, 9.8.1958. (vii) Nil.

5. RESULTS :

(i) 30.49 tons/ac. (ii) 2.64 tons/ac. (iii) Treatment differences are highly significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_5	M_5	M_6	M_7	M_8
Av. yield	23.91	31.74	29.57	30.49	32.32	28.58	32.84	32.88	32.07

S.E./mean = 1.32 tons/ac.

* * *

Crop :- Sugarcane. **Ref :- Bh. 57(62).**

Site :- Zonal Centre, Narkatiaganj. **Type :- 'M'.**

Object :—To test A/S/N as source of N against oil cakes and A/S for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai*. (c) 18 lb./ac. of Super. (ii) (a) Sandy loam (non-calcareous). (b) Refer soil analysis, Narkatiaganj. (iii) 10.2.1957. (iv) (a) Tractor ploughing with harrow twice. (b) Flat method. (c) 60 mds./ac. (d) Rows 3′ apart. (e) Nil. (v) G.M. with *Sanai*. (vi) BO—14. (vii) Irrigated. (viii) Two interculturtings with 5-tyred cultivator and earthing up with ridger. (ix) 41.45″. (x) 11.1.1958.

2. TREATMENTS :

Same as in expt. no 57(87) on page 713.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N A. (iii) 4. (iv) (a) 1/30 ac. (b) 1/40 ac. (v) One row on either side. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) No. of mature stalks, yield and juice analysis. (iv) (a) 1957—1958. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 18.75 tons/ac. (ii) 1.69 tons/ac. (iii) Treatment differences are significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8
Av. yield	15.02	20.42	19.25	16.71	18.55	20.17	19.28	19.65	19.73

S.E./mean = 0.85 tons/ac.

Crop :- Sugarcane. **Ref. :- Bh. 58(62).**

Site :- Zonal Centre, Narkatiaganj. **Type :- 'M'.**

Object :—To test A/S/N as source of N against oilcakes and A/S for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai*. (c) 17.9 lb./ac. of P_2O_5 as super. (ii) (a) Non calcareous ; sandy loam. (b) Refer soil analysis, Narkatiaganj. (iii) 7.11.1958. (iv) (a) Stubble breaking with disc plough ; 2 ploughings by tractor drawn harrow followed by *hinga* each time. (b) Flat method. (c) 60 mds/ac. (d) Rows 3′ apart. (e) Nil. (v) G.M. with *sanai*. (vi) BO—14 (medium). (vii) Irrigated. (viii) 3 interculturings with 5-tyred cultivator and earthing in June. (ix) 41.38″. (x) 8 to 14.1.1960.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 57 (87) on page 713.

4. GENERAL :

(i) Average. (ii) Nil. (ii) No. of mature stalk, sucrose % and cane yield. (iv) (a) 1957—1958. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 27.63 tons/ac. (ii) 3.08 tons/ac. (iii) Treatment differences are significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8
Av. yield	20.31	27.84	30.78	29.24	31.15	28.98	28.72	25.71	25·97

S.E./mean = 1.54 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 57(88).**

Site :- Zonal Centre, Narkatiaganj. **Type :- 'M'.**

Object :—To find the out dose and time of application of different kinds of nitrogeneous fertilizers for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) 17.9 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy loam (non calcareous). (b) Refer soil analysis, Narkatiaganj. (iii) 24.25.11.1957. (iv) (a) Stubble breaking with disc ploughing, G.M. 2 ploughings with tractor drawn harrow followed by *hinga* each time. (b) Flat method. (c) 60 mds./ac. (d) Rows 3′ apart. (e) Nil. (v) G.M. with *sanai*+75 lb./ac. of $P{\cdot}O_5$ as super. (vi) BO-17 (medium). (vii) Unirrigated. (viii) 3 interculturings with 5-tyred cultivator. (ix) 63.47″. (x) 6 to 10.2.1959.

2. TREATMENTS :

M_0=Control (no manure).
M_1=60 lb./ac. of N. as A/S at planting.
M_2=60 lb./ac. as A/S/N at planting.
M_3=45 lb./ac. as A/S at planting+15 lb./ac. of N as A/S. at earthing.
M_4=45 lb./ac. of N as A/S/N as planting+15 lb./ac. of N as A/S/N earthing.
M_5=30 lb./ac. of N as A/S as planting+30 lb./ac. of N as A/S at earthing.
M_6=30 lb./ac. of N as A/S/N as planting+30 lb./ac. of N as A/S/N at earthing.
M_7=15 lb./ac. of N as A/S at planting+45 lb./ac. of N as A/S at earthing.
M_8=15 lb./ac. of N as A/S/N at planting+45 lb./ac. of N as A/S/N at earthing.
M_9=60 lb./ac. of N as A/S at earthing.
M_{10}=60 lb./ac. N as A/S/N at earthing.

3. DESIGN :

(i) R.B.D. (ii) (a) 11. (b) 264′×60.5′. (iii) 4. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) One row on either side along length. (vi) Yes.

4. GENERAL :

(i) Average. (ii) Nil. (iii) No. of mature stalks, sucrose% and cane yield. (iv) (a) 1957—1958. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 27.03 tons/ac. (ii) 2.21 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8	M_9	M_{10}
Av. yield	25.01	26.34	27.18	27.37	27.70	29.02	26.61	28.39	26.96	25.71	27.00

S.E/mean = 1.11 tons./ac.

Crop :- Sugarcane. **Ref :- Bh. 57(63).**

Site :- Zonal Centre, Narkatiaganj. **Type :- 'M'.**

Object :—To find out the dose and time of application of different kinds of nitrogeneous fertilizers for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Sannhemp. (c) 18 lb./ac. of Super. (ii) (a) Sandy loam (non calcareous). (b) Refer soil analysis, Narkatiaganj. (iii) 14, 15.2.1957. (iv) (a) Twice tractor driven harrow worked. (b) Flat method. (c) 60 mds./ac. (d) Rows 3′ apart. (e) Nil. (v) G.M. with *sanai*+75 lb./ac. of P_2O_5 as Super. (vi) BO—17 (medium). (vii) Unirrigated. (viii) Two interculturings with 5-tyred cultivator and earthing up with ridger. (ix) 41.45″. (x) 1 to 6.1.1958.

2. TREATMENTS :

Same as in expt. no. 57(88) above.

3. DESIGN :

(i) R.B.D. (ii) (a) 11. (b) N.A. (iii) 4. (iv) (a) 1/30 ac. (b) 1/40 ac. (v) One row on either side along length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) No. of mature stalks, juice analysis and cane yield. (iv) (a) 1957—1958. (b) No. (c) —. (v) (a) Other zonal centres. (b) Nil. (vi) Heavy rains on 30.6.1957. (vii) Nil.

5. RESULTS :

(i) 21.23 tons/ac. (ii) 2.79 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8	M_9	M_{10}
Av. yield	19.80	21.45	20.30	21.93	21.71	22.74	21.89	20.35	21.34	22.15	19.84

S.E./mean = 1.40 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 58(64).**

Site :- Zonal Centre, Narkatiaganj. **Type :- 'M'.**

Object :—To find out the dose and time of application of different kinds of nitrogeneous fertilizers for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai*. (c) 17.9 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy loam (non calcareous). (b) Refer soil analysis, Narkatiaganj. (iii) 12.11.1958. (iv) (a) Stubble breaking with disc plough, 2 ploughings with tractor drawn harrow plough followed by *hinga*. (b) Flat method. (c) 60 mds./ac. (d) Rows 3′ apart. (e) Nil. (v) G.M. with *Sanai*+75 lb./ac. of P_2O_5 as Super. (vi) BO—17 (medium). (vii) Irrigated. (viii) 3 interculturings with 5-tyred cultivator and earthing up in June. (ix) 41.38″. (x) 14 to 16.2.1960.

2. TREATMENTS :

Same as in expt. no. 57(88) on page 715.

3. DESIGN :

(i) R.B.D. (ii) (a) 11. (b) 264′×60.5′. (iii) 3. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) One row on either side along length. (vi) Yes.

4. GENERAL :

(i) Average (ii) Nil. (iii) Biometric observations and cane yield. (iv) (a) 1957—1958. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 29.81 tons/ac. (ii) 5.04 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8	M_9	M_{10}
Av. yield	32.54	36.47	27.70	30.74	30 52	28.94	27.77	30.60	26.89	24.72	31.04

S.E./mean = 2.91 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 54(98).**

Site :- Zonal Centre, Narkatiaganj. **Type :- 'M'.**

Object :—To compare the effects of pressmud and molasses with standard manure on Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Sugarcane. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Narkatiaganj. (iii) 15.2.1954. (iv) (a) Ploughing twice with mould board plough. (b) Ridge and furrow method. (c) 14400 three-budded setts/ac. (d) Row to row 3′. (e) Nil. (v) Nil. (vi) BO—21 (early). (vii) N.A. (viii) Earthing up with ridger. (ix) 65.07″. (x) 2 to 10.11.1954.

2. TREATMENTS :

M_0=Control (no manure), M_1=60 lb./ac. of N as A/S+75 lb./ac. of P_2O_5 as Super, M_2=100 mds./ac. of pressmud, M_3=200 mds./ac. of pressmud, M_4=100 mds./ac. of molasses and M_5=200 mds./ac. of molasses.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) One row on either side along length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) No. of mature stalks and cane yield. (iv) (a) 1954—1955. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 26.36 tons/ac. (ii) 2.45 tons/ac. (iii) Treatment differences are significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	24.37	24.32	27.01	27.51	26.63	28.31

S.E./mean = 1.00 ton/ac.

Crop :- Sugarcane. **Ref :- Bh. 55(195).**

Site :- Zonal Centre, Narkatiaganj. **Type :- 'M'.**

Object :—To compare the effect of press mud and molasses with A/S and Super on Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Narkatiaganj. (iii) 3.2.1955. (iv) (a) Two ploughings with tractor followed by hoeings. (b) Furrow method of planting. (c) 50 mds/ac. (d) Rows 3′ apart. (e) 40 three-budded setts/row. (v) Nil. (vi) BO—21. (vii) Unirrigated (viii) 3 interculturings and earthing up. (ix) 86.50″. (x) 23, 24.2.56.

2. TREATMENTS :

M_0=Control.
M_1= 60 lb./ac. of N as A/S+75 lb./ac. of P_2O_5 as Super.
M_2= 60 lb./ac. of N as molasses+75 lb./ac. of P_2O_5 as Super.
M_3=120 lb./ac. of N as molasses+150 lb./ac. of P_2O_5 as Super.
M_4= 60 lb./ac. of N as pressmud+75 lb./ac. of P_2O_5 as Super.
M_5=120 lb./ac. of N as pressmud+150 lb./ac. of P_2O_5 as Super.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) One row on each side along length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Count of mature stalks and cane yield. (iv) (a) Nil. (b) and (c) No. (v) (a) Other zonal centres. (b) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 24.24 tons/ac. (ii) 5.08 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	23.07	24.32	25.31	23.25	27.62	21.86

S.E./mean = 2.07 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 54(100).**

Site :- Zonal Centre, Narkatiaganj. **Type :- 'M'.**

Object :—To compare the effect of A/S and A/N on Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Sugarcane. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Narkatiaganj. (iii) 1.2.1954. (iv) (a) Ploughings twice with mould board plough. (b) Ridge and furrow method. (c) 14400 three-budded setts/ac. (d) Row to row 3′. (e) Nil. (v) Nil. (vi) BO—21 (early). (vii) N.A. (viii) Earthing up with ridger. (ix) 65.24″. (x) 1 to 5.1.1955.

2. TREATMENTS :

M_0=Control (no manure).
M_1= 40 lb./ac. of N as A/N.
M_2= 40 lb./ac. of N as A/S.
M_3= 80 lb./ac. of N as A/N.
M_4= 80 lb./ac. of N as A/S.
M_5=120 lb./ac. of N as A/N.
M_6=120 lb./ac. of N as A/S.

3. DESIGN :

(i) R B.D. (ii) (a) 7 (b) N.A. (iii) 4. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) One row on either side along length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Biometric observations and cane yield. (iv) (a) and. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 21.18 tons/ac. (ii) 2 82 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6
Av. yield	20.33	18.33	23.62	21.10	20.79	22.09	22.02

S.E./mean = 1.41 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 54(118)**

Site :- Zonal Centre, Narkatiaganj. **Type :- 'M'.**

Object :— To study the effect of phosphate manuring of G.M. crop on subsequent Sugarcane crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) G.M. crop (*Sanai*). (c) As per treatments. (ii) (a) Sandy loam. (b) Refer soil analysis, Narkatiaganj. (iii) 15, 16.11.1954. (iv) (a) 2 ploughings by mould board plough. (b) Ridge and furrow methods. (c) 14400 three-budded setts/ac. (d) Rows 3′ apart. (e) Nil. (v) Nil. (vi) CO—453 (medium). (vii) Irrigated. (viii) Once earthing. (ix) 86.53″. (x) 21 to 23.12.1955.

2. TREATMENTS :

P_0=Control (no manure)
P_1= 50 lb./ac. of P_2O_5 as Super applied to *Sanai*.
P_2=100 lb./ac. of P_2O_5 as Super applied to *Sanai*.
P_3=150 lb./ac. of P_2O_5 as Super applied to *Sanai*.
P_4=200 lb./ac. of P_2O_5 as Super applied to *Sanai*.
P_5=250 lb./ac. of P_2O_5 as Super applied to *Sanai*.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) One row on either side along length. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Some damage was done by top-borer. (iii) Sucrose %, biometric observations and cane yield. (iv) (a) to (c) No. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 21.64 tons/ac. (ii) 5.00 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of sugarcane in tons./ac.

Treatment	P_0	P_1	P_2	P_3	P_4	P_5
Av. yield	21.02	20.05	22.89	21.04	22.81	22.01

S.E. mean = 2.04 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 57(64)**

Site :- Zonal Centre, Pachrukhi. **Type :- 'M'.**

Object :- To test A/N as a source of N against oilcakes and A/S for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Sannhemp. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 28.3.1957. (iv) (a) Disc ploughing once, disc harrowing twice, cultivator thrice and *hinga* 5 times. (b) Flat method. (c) 65 mds./ac. (d) Rows 3′ apart. (e) Nil. (v) G.M. with Sannhemp. (vi) BO—28. (vii) Unirrigated. (viii) 3 interculturings. (ix) 22.0″. (x) 20.2.1958.

2. TREATMENTS and 3. DESIGN :

Same as in expt. No. 57 (87) on page 713.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Biometric observations and cane yield. (iv) (a) 1957—1959. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 22.64 tons/ac. (ii) 4.04 tons/ac. (iii) Treatment differences are significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8
Av. yield	16.71	21.60	22.33	23.29	29.75	21.01	18.77	28.54	21.75

S.E /mean = 2.02 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 57(182).**

Site :- Zonal Centre, Pachrukhi. **Type :- 'M'.**

Object :—To test A/S/N as source of N against different oilcakes and A/S for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Sugarcane. (c) 6 mds./ac. of castorcake+3 mds./ac. of Super+2½ mds./ac. of A/S. (ii) (a) Sandy loam. (b) N.A. (iii) 24.11.1957. (iv) (a) 4 ploughings. (b) Flat method. (c) 65 mds./ac. (d) Rows 3′ apart. (e) Nil. (v) Nil. (vi) BO—14. (vii) Irrigated. (viii) 5 times interculturing, hoeing and weeding. (ix) 39.6″. (x) 4.1.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 57(87) on page 713.

4. GENERAL :

(i) Good. (ii) Mild attack of Pyrilla—no control measures taken. (iii) Cane yield. (iv) (a) 1957—1959. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 16.75 tons/ac. (ii) 5.38 tons/ac. (iii) Treatment differences are not significant. (ix) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8
Av. yield	12.71	14.51	18.44	12.89	17.12	17.89	18.40	15.98	22.85

S.E./mean = 2.69 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 59(32).**

Site :- Zonal Centre, Pachrukhi. **Type :- 'M'.**

Object :—To test the A/S/N as source of N against A/S and different oilcakes for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 20.2.1959. (iv) (a) Burying *sanai,* 4 ploughings 5 *hinga.* (b) Flat method. (c) 65 mds./ac. (d) Rows 3′ apart. (e) Nil. (v) G.M. with *sanai.* (vi) BO—14. (vii) Irrigated. (viii) 5 Interculturings. (ix) N.A. (x) 5.1.1960.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 57(87) on page 713.

4. GENERAL :

(i) Good. (ii) Borer attack, no control measures taken. (iii) No. of mature stalks, biometric observations and cane yield. (iv) (a) 1957—1959. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 16.66 tons/ac. (ii) 2.37 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8
Av. yield	9.88	13.59	17.37	16.71	18.92	18.15	18.77	18.18	18.33

S.E./mean = 1.19 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 57(65).**

Site :- Zonal Centre, Pachrukhi. **Type :- 'M'.**

Object :—To compare the effect of compost with A/S in combination with Super on Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) G.M. crop. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 15.4.1957. (iv) (a) Disc plough, disc harrow, cultivator and *hinga.* (b) Flat method. (c) 65 mds./ac. (d) Rows 3′ apart. (e) Nil. (v) G.M. (vi) BO—29. (vii) Unirrigated. (viii) 4 interculturings with tractor. (ix) 22.0″. (x) 11.1.1958.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 57(89) on page 712.

4. GENERAL :

(i) Nil. (ii) Termite attack—no control measures taken. (iii) Biometric observations and cane yield. (iv) (a) 1957—1958. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 3.09 tons/ac. (ii) 2.95 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3
Av. yield	2.75	1.72	4.33	3.56

S.E./mean = 1.20 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 58(67).**

Site :- Zonal Centre, Pachrukhi. **Type :- 'M'.**

Object :—To compare the effect of compost with A/S in combination with Super on Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 15.3.1958. (iv) (a) 1 disc ploughing, 2 cultivator, once harrow and 4 beamings. (b) Flat method. (c) 65 mds./ac. (d) Rows 3′ apart. (e) Nil. (v) G.M. with *sanai.* (vi) BO—17. (vii) Irrigated. (viii) 3 interculturings and 3 weedings. (ix) 39.6″. (x) 16.2.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 57(89) on page 712.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Biometric observations and cane yield. (iv) (a) 1957—1958. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 7.41 tons/ac. (ii) 4.21 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3
Av. yield	5.47	8.89	7.60	7.68

S.E./mean = 1.72 tons/ac.

———

Crop :- Sugarcane. **Ref :- Bh. 58(66).**
Site :- Zonal Centre, Pachrukhi. **Type :- 'M'.**

Object :—To compare the effect of compost with A/S in combination with Super on Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) Nil. (ii) (a) Sandy loam (calcareous). (b) N.A. (iii) 14.11.1958. (iv) (a) 4 ploughings by *desi* plough, 5 operations with *hinga.* (b) Flat method. (c) 65 mds/ac. (d) Rows 3′ apart. (e) Nil. (v) G.M. with *sanai.* (vi) BO—17. (vii) Irrigated. (viii) 5 interculturing operations. (ix) 41.75″. (x) 3.1.1960.

2. TREATMENTS and 3. DESIGN :

Same as in expt, no. 57(89) on page 712.

4. GENERAL :

(i) Good. (ii) Stem borer attack, no control measures taken. (iii) Boimetric observations and cane yield. (iv) (a) 1957—1958. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 14.09 tons/ac. (ii) 2.21 tons/ac. (iii) Treatment differences are highly significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3
Av. yield	7.86	16.46	16.79	15.24

S.E,/mean = 0.90 tons/ac.

———

Crop :- Sugarcane. **Ref :- Bh. 57(66).**
Site :- Zonal Centre, Pachrukhi. **Type :- 'M'.**

Object :—To find the dose and time of application of different kinds of nitrogeneous fertilizers for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Sannhemp. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 4.4.1957. (iv) (a) Disc plough, disc harrow ; cultivator and *hinga.* (b) Flat method. (c) 65 mds./ac. (d) Rows 3′ apart. (e) Nil. (v) G.M. with sannhemp+75 lb./ac. of P_2O_5 as Super. (vi) BO—29. (vii) Unirrigated. (viii) 4 interculturing. (ix) 22.0″. (x) 14.2 1958.

2. TREATMENTS :

Same as in expt. no. 57(88) on page 715.

3. DESIGN :

(i) R.B.D. (ii) (a) 11. (b) N.A. (iii) 4. (iv) (a) 1/30 ac. (b) 1/40 ac. (v) 1 row on either side. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Biometric observations and cane yield. (iv) (a) 1957—1958. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 14.94 tons/ac. (ii) 5.22 tons/ac. (iii) Treatment differences are significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8	M_9	M_{10}
Av. yield	9.73	13.40	18.44	14.03	13.59	15.39	23.07	12.67	18.84	12.56	12.67

S.E./mean = 2.61 tons/ac.

Crop :- Sugarcane. **Ref. :- Bh. 58(68).**

Site :- Zonal Centre, Pachrukhi. **Type :- 'M'.**

Object :—To find out the dose and time of application of different kinds of nitrogenous fertilizers for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Sugarcane. (c) 6 mds./ac. of castorcake, 3 mds./ac. of Super and 2½ mds./ac. of A/S. (ii) (a) Sandy loam. (b) N.A. (iii) 12.2.1958. (iv) (a) One disc ploughing, 2 cultivator, one harrowing and 4 beamings. (b) Flat method. (c) 65 mds./ac. (d) Row to row 3′. (e) Nil. (v) Nil. (vi) BO—17. (vii) Unirrigated. (viii) Interculturing and weeding 4 times. (ix) 39.6″. (x) 12.1.1959.

2. TREATMENTS :

Same as in expt. no. 57(88) on page 715.

3. DESIGN :

(i) R.B.D. (ii) (a) 11. (b) N.A. (iii) 4. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) One row on both sides along length. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) Nil. (iii) Biometric observations and cane yield. (iv) (a) 1957—1958. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 6.97 tons/ac. (ii) 1.99 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8	M_9	M_{10}
Av. yield	4.13	6.91	7.16	8.19	6.91	7.49	7.68	8.49	5.73	8.19	5.80

S.E./mean = 1.00 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 54(91).**

Site :- Zonal Centre, Pachrukhi. **Type :- 'M'.**

Object :—To compare the effect of pressmud and molasses with standard manures on Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai*. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 11.2.1954. (iv) (a) Furrowing by ridger. (b) N.A. (c) 60 three-budded setts/row. (d) Row to row 3′. (e) Nil. (v) Nil. (vi) CO—453 (late). (vii) N.A. (viii) Hoeing and earthing up. (ix) 29.29″. (x) 6.3.1955.

2. TREATMENTS :

M_0=Control (no manure)
M_1=60 lb./ac. of N as A/S+75 lb./ac. of P_2O_5 as Super.
M_2=8200 lb./ac. of pressmud.
M_3=16400 lb./ac. of pressmud.
M_4=8200 lb./ac. of molasses.
M_5=16400 lb./ac. of molasses.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) 60.5′×144′. (iii) 5. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) 1 row on each side along length. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) No. of mature stalks and cane yield. (iv) (a) 1953—1954. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 17.42 tons/ac. (ii) 1.60 ton./ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	17.23	17.78	20.02	14.88	17.45	17.19

S.E./mean = 0.72 ton/ac.

Crop :- Sugarcane. **Ref :- Bh. 54(88).**

Site :- Zonal Centre, Pachrukhi. **Type :- 'M'.**

Object :— To study the effect of phosphate manuring of G.M. crops on subsequent Sugarcane crop.

1. BASAL CONDITIONS :

(i) (a) G.M.—Sugarcane—G.M. (b) G.M. crop. (c) As per treatments. (ii) (a) Sandy loam. (b) N.A. (iii) 16.2.1954. (iv) (a) Furrowing by ridger. (b) N.A. (c) 60 three-budded setts/row. (d) Row to row 3′. (e) Nil. (v) Nil. (vi) CO—453 (late). (vii) N.A. (viii) Hoeing and earthing up. (ix) 29.29″. (x) 29.3.1955.

2. TREATMENTS :

All combinations of (1) and (2).
(1) 2 G.M. crops : G_1=*Sanai* and G_2=Soyabean.
(2) 6 levels of P_2O_5 as Super : P_0=0, P_1=50, P_2=150, P_3=150, P_4=200 and P_5=250 lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 12. (b) 144′×127′. (iii) 6. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) 1 row on each side along length. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Biometric observations and cane yield. (iv) (a) and. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 17.20 tons/ac. (ii) 2.47 tons/ac. (iii) Main effect of G is highly significant. (iv) Av. yield of cane in tons/ac.

	P_0	P_1	P_2	P_3	P_4	P_5	Mean
G_1	15.70	15.71	16.41	17.24	15.65	16.23	16.16
G_2	17.27	19.03	19.58	17.06	16.48	20.02	18.24
Mean	16.49	17.37	18.00	17.15	16.07	18.13	17.20

S.E. of G marginal mean = 0.41 tons/ac.
S.E. of P marginal mean = 0.71 tons/ac.
S.E. of body of table = 1.01 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 56(150)**
Site :- Zonal Centre, Pachrukhi. **Type :- 'M'.**

Object :- To find the optimum requirements of N, P and K for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 21.3.1956. (iv) 2 ploughings by disc plough. (b) Flat method. (c) 65 mds./ac. (d) Rows 3′ apart. (e) Nil. (v) Nil. (vi) BO—21. (vii) Unirrigated. (viii) Interculturing, weeding and earthing. (ix) N.A. (x) 13.2.1957.

2. TREATMENTS :

All combinations of (1), (2) and (3).

(1) 3 levels of N as A/S : $N_0=0$, $N_1=40$ and $N_2=80$ lb./ac.
(2) 3 levels of P_2O_5 as Super : $P_0=0$, $P_1=50$ and $P_2=100$ lb./ac.
(3) 3 levels of K_2O as Mur. Pot. : $K_0=0$, $K_1=80$ and $K_2=160$ lb./ac.

3. DESIGN :

(i) 3^3 partially confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) N.A. (iii) 4. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) One row on each side along length. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) No. of mature stalks and cane yield. (iv) (a) to (c) N.A. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 11.27 tons/ac. (ii) 2.83 tons/ac. (iii) None of the effects is significant. (iv) Av. yield of cane in tons/ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	11.83	9.48	11.25	9.55	11.47	11.53	10.85
N_1	12.05	10.47	11.42	11.46	10.65	11.83	11.31
N_2	10.57	12.16	12.25	10.44	11.80	12.73	11.66
Mean	11.48	10.70	11.64	10.48	11.31	12.03	11.27
P_0	8.78	10.58	12.10				
P_1	11.67	10.88	11.37				
P_2	13.99	10.64	11.46				

S.E. of any marginal mean = 0.47 tons/ac.
S.E. of means of body of any table = 0.82 tons/ac.

Crop :-Sugarcane. **Ref :- Bh. 55(196).**

Site :- Zonal Centre, Pachrukhi. **Type :- 'M'.**

Object :—To find out the effect of manuring on ratoon crop of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Sugarcane. (c) 60 lb./ac. of N as A/S+75 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy loam. (b) N.A. (iii) Ratoon of 1954. (iv) (a) 4 ploughings and 5 harrowings by tractor. (b) Flat method. (c) 65 mds./ac. (d) Rows 3′ apart. (e) Nil. (v) Nil. (vi) CO—453. (vii) Irrigated. (viii) 2 hoeings. (ix) 35.09″. (x) 10.12.1955.

2. TREATMENTS :

T_1=M at first irrigation.
T_2=½ of M at irrigation and ½ at earthing up.
T_3=¾ of M at irrigation and ¼ at earthing up.
T_4=¼ of M at irrigation and ¾ at earthing up.
T_5=Control (no manure).
where M=60 lb./ac. of N as A/S+75 lb./ac. of P_2O_5 as Super.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) 1/30 ac. (b) 1/40 ac. (v) One row on either side. (vi) Yes.

4. GENERAL :

(i) Average. (ii) Mild attack of red-rot—affected clumps removed. (iii) Biometric observations and cane yield. (iv) (a) to (c) No. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 8.57 tons/ac. (ii) 2.34 tons/ac. (iii) Treatment differences are significant. (iv) Av. yield of cane in tons/ac.

Treatment	T_1	T_2	T_3	T_4	T_5
Av. yield	7.44	8.07	9.67	9.57	8.08

S.E./mean = 0.96 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 58(94).**

Site :- Zonal Centre, Pandaul. **Type :- 'M'.**

Object :—To test A/S/N as source of N against oilcakes and A/S for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) 50 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy loam (calcareous). (b) N.A. (iii) 3.11.1958. (iv) (a) Two tractor ploughings followed by one harrowing by disc harrow. (b) Flat planting. (c) 60 three-budded setts/row. (d) Rows 3′ apart. (e) Nil. (v) Nil. (vi) BO—14. (vii) Unirrigated. (viii) 6 interculturing operations from January to May 1959 and weeding twice. (ix) 43.76″. (x) 11, 12.12.1959.

2. TREATMENTS :

M_0=Control (no manure).
M_1= 60 lb./ac. of N as A/S+75 lb./ac. of P_2O_5 as Super.
M_2=120 lb./ac. of N as A/S+150 lb./ac. of P_2O_5 as Super.
M_3= 60 lb./ac. of N as A/S/N+75 lb./ac. of P_2O_5 as Super.
M_4=120 lb./ac. of N as A/S/N+150 lb./ac. of P_2O_5 as Super.
M_5= 60 lb./ac. of N as G.N.C.+75 lb./ac. of P_2O_5 as Super.
M_6=120 lb./ac. of N as G.N.C.+150 lb./ac. of P_2O_5 as Super.
M_7= 60 lb./ac. of N as castor cake+75 lb./ac. of P_2O_5 as Super.
M_8=120 lb./ac. of N as castor cake+150 lb./ac. of P_2O_5 as Super.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) One row on each side along length. (vi) Yes.

4. GENERAL :

(i) Partially lodged in August 1959. (ii) Termite and Pyrilla attack—spraying of Endrex was done. (iii) Biometric observations and cane yield. (iv) (a) and (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 20.17 tons/ac. (ii) 3.46 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_2	M_4	M_5	M_6	M_7	M_8
Av. yield	15.74	21.12	21.46	19.22	21.72	19.06	21.33	19.88	22.04

S.E./mean = 1.73 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 58(92).**

Site :- Zonal Centre, Pandaul. **Type :- 'M'.**

Object :—To test A/S/N as source of N against oilcakes and A/S.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) 50 lb./ac. of P_2O_5 as Super. (ii) (a) Clay loam (calcareous). (b) N.A. (iii) 6.2.1958. (iv) Two tractor ploughings followed by one disc harrowing. (b) Flat planting. (c) N.A. (d, Rows 3′ apart (e) Nil. (v) G.M. with *Sanai.* (vi) BO—14. (vii) Unirrigated. (viii) 6 intercultural operations with 5—tyred cultivator and once weeding. (ix) 52.67″. (x) 4 to 16.1.1958.

2. TREATMENTS :

Same as in expt. no. 58(94) on page 725.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) One row on both sides along length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) No. (iii) No. of mature stalks, sucrose %. and cane yield. (iv) (a) and. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil,

5. RESULTS :

(i) 28.66 tons/ac. (ii) 2.93 tons/ac. (iii) Treatment differences are highly significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8
Av. yield	24.59	28.88	30.87	27.31	31.89	27.51	29.12	27.31	30.44

S.E./mean = 1.47 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 58(93).**

Site :- Zonal Centre, Pandaul. **Type :- 'M'.**

Object :—To find out the dose and time of application of different kinds of nitrogeneous fertilizers.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) 50 lb./ac. of P_2O_5 as Super. (ii) (a) Clay loam (calcareous). (b) N.A. (iii) 7.2.1958. (iv) (a) Two tractor ploughings followed by one harrowing by disc harrow. (b) Flat planting. (c) 60 three-budded. setts/ac. (d) Rows 3′ apart. (e) Nil. (v) G.M. with *Sanai*+75 lb./ac. of P_2O_5 as Super before planting. (vi) BO—17. (vii) Unirrigated. (viii) 6 intercultural operations with 5-tyred cultivator and once weeding. (ix) 52.67″. (x) 9 to 12.12.1958.

2. TREATMENTS :

Same as in expt. no. 57(88) on page 715.

3. DESIGN :

(i) R.B.D. (ii) (a) 11. (b) N.A. (iii) 4. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) One row on each side along length. (vi) Yes.

4- GENERAL :

(i) Bad. (ii) Heavy attack of borers and grab—spraying with Endrine was done. (iii) Biometric observation and cane yield. (iv) (a) to (c) No. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 5.23 tons/ac. (ii) 2.52 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8	M_9	M_{10}
Av. yield	2.69	6.43	3.74	5.79	5.68	3.17	5.31	4.85	7.78	5.32	6.78

S.E./mean = 1.26 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 54(84)**

Site :- Zonal Centre, Parsa. **Type :- 'M'.**

Object :- To compare the effect of A/S and A/N on Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Oats. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 15.2.1954. (vi) (a) One tractor ploughing followed by 2 to 3 light harrowings and planking. (b) Flat planting. (c) to (e) N.A. (v) G.M. (vi) BO—21. (vii) N.A. (viii) One interculture every ½month till earthing and one weeding. (ix) 91.7″. (x) 9 to 13.1.1955.

2. TREATMENTS :

M_0=Control (no manure).
M_1= 40 lb./ac. of N as A/N.
M_2= 40 lb./ac. of N as A/S.
M_3= 80 lb./ac. of N as A/N.
M_4= 80 lb./ac. of N as A/S.
M_5=120 lb./ac. of N as A/N.
M_6=120 lb./ac. of N as A/S.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 6. (vi) (a) 60.5′×24′. (b) 60.5′×18′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) No. (iii) Biometric observations and cane yield. (vi) (a) to (c) No. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 16.4 tons/ac. (ii) 1.17 tons/ac. (iii) Treatment differences are not significant. (vi) Av. yield of cane in tons./ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6
Av. yield	14.15	15.70	15.19	17.36	15.90	17.63	16.35

S.E./mean = 0.48 tons./ac.

Crop :- Sugarcane. **Ref :- Bh. 54(83).**

Site :- Zonal Centre, Parsa **Type :- 'M'.**

Object :—To find out the optimum requirements of N, P and K for Sugarcane.

1. BASAL CONDITIONS.

(i) (a) Nil. (b) Oats. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 2.2.1954. (vi) (a) One tractor ploughing followed by 2 to 3 light harrowings and planking. (b) to (e) N.A. (v) G.M. (vi) BO–21. (vii) Unirrigated. (viii) One interculture every month till earthing, weeding and earthing. (ix) 91.7″. (x) 6.2.1955.

2. TREATMENTS .

All combinations of (1), (2) and (3)

(1) 3 levels of N as A/S : $N_0=0$, $N_1=40$ and $N_2=80$ lb./ac.
(2) 3 levels of P_2O_5 as Super : $P_0=0$, $P_1=50$ and $P_2=100$ lb./ac.
(3) 3 levels of K_2O as Mur. Pot. : $K_0=0$, $K_1=80$ and $K_2=160$ lb./ac.

3. DESIGN :

(i) 3^3 partially confd. (ii) (a) 9 plots/block and 3 blocks/replication. (b) N.A. (iii) 3. (iv) (a) 1/30 ac. (b) 1/40 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Stray cases of red-rot—affected plants removed. (iii) No. of mature stalks, cane yield and juice analysis. (iv) (a) 1954—1956. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 20.29 tons/ac. (ii) 1.90 tons/ac. (iii) None of the effects is significant. (iv) Av. yield of cane in tons/ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	19.22	19.22	20.07	20.07	17.26	21.18	19.50
N_1	19.67	21.01	20.62	19.58	20.62	21.09	20.43
N_2	20.64	19.89	22.28	20.16	20.69	21.97	20.94
Mean	19.84	20.04	20.99	19.94	19.52	21.41	20.29
P_0	18.69	20.16	20.97				
P_1	19.38	18.85	20.34				
P_2	21.46	21.11	21.66				

S.E. of any marginal mean = 0.37 tons./ac.
S.E. of body of any table = 0.63 tons./ac.

* * *

Crop :- Sugarcane. **Ref :- Bh.56(149).**
Site :- Zonal Centre, Parsa. **Type :- 'M'.**

Object :—To find out the optimum requirements of N, P and K for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) Nil. (ii) (a) Clay loam. (b) N.A. (iii) 19 to 28.12.1956. (iv) (a) 4 ploughings by *desi* plough. (b) Flat method. (c) 50 mds/ac. (d) Rows 3′ apart. (e) Nil. (v) G.M. with *sanai.* (vi) BO—17. (vii) Unirrigated. (viii) One interculturing. (ix) 99.66″. (x) 17 to 19.2.1958.

2. TREATMENTS :

Same as in expt. no. 54(83) on page 727.

3. DESIGN :

(i) 3^3 partially confd. (ii) (a) 9 plots/block and 3 blocks/replication. (b) N.A. (iii) 4. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) One row on each side along length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Attack of pyrilla, top-borer and stem-borer. (iii) No. of mature stalks and cane yield. (iv) (a) 1954—1956 (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 16.45 tons/ac. (ii) 2.06 tons/ac. (iii) Main effects of N and K alone are significant. (iv) Av. yield of cane in tons/ac.

	K_0	K_1	K_2	P_0	P_1	P_2	Mean
N_0	14.86	16.14	15.88	14.82	15.93	16.14	15.63
N_1	15.56	17.34	17.29	16.21	16.68	17.30	16.73
N_2	17.28	17.90	16.10	17.37	16.70	17.20	17 09
Mean	15.90	17.13	16.42	16.13	16.44	16.88	16.48
P_0	15.62	16.31	16.47				
P_1	16.25	16.96	16.10				
P_2	15.83	18.11	16.70				

S.E. of any marginal mean = 0.34 tons/ac.
S.E. of body of any table = 0.59 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 57(240).**
Site :- Zonal Centre, Parsa. **Type :- 'M'.**

Object :—To find out the dose and time of application of different kinds of nitrogeneous fertilizers for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Clayey loam. (b) N.A. (iii) N.A. (iv) (a) 5 ploughings. (b) Flat method. (c) 55 mds/ac. (d) Row to row 3'. (e) Nil. (v) Nil. (vi) BO—29. (vii) Irrigated. (viii) 2 weedings and earthing up. (ix) and (x) N.A.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 sources of 60 lb./ac. of N : S_1=A/S, S_2=A/S/N.

(2) 5 times of application of N : T_1=Full dose of N at planting, $T_2=\frac{3}{4}$ dose of N at planting+$\frac{1}{4}$th at earthing up, $T_3=\frac{1}{2}$ dose of N at planting.+$\frac{1}{2}$ at earthing up, $T_4=\frac{1}{4}$ dose of N at planting+$\frac{3}{4}$ at earthing up, T_5=Full dose of N at earthing up and one control.

75 lb./ac. of P_2O_5 as Super applied to all plots except control at the time of planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 11. (b) N.A. (iii) 4. (iv) (a) 60.5'×24'. (b) 60.5'×18'. (v) One row on either side along length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Cane yield. (iv) (a) to (c) No. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 15.96 tons/ac. (ii) 1.98 tons/ac. (iii) Only S effect is significant. (iv) Av. yield of sugarcane in tons/ac.

Control = 12.45 tons/ac.

	T_1	T_2	T_3	T_4	T_5	Mean
S_1	15.32	17.15	18.18	15.61	14.33	16.12
S_2	15.61	13.37	21.12	13.11	19.28	16.50
Mean	15.47	15.26	19.65	14.36	16.81	16.31

S.E. of S marginal mean = 0.44 ton/ac.
S.E. of T marginal mean = 0.70 ton/ac.
S.E. of body of table = 0.99 ton/ac.

Crop :- Sugarcane. **Ref :- Bh. 55(244).**

Site :- Zonal Centre, Parsa. **Type :- 'M'.**

Object :—To study the effect of phosphate manuring of G.M. crops on subsequent Sugarcane crop.

1. BASAL CONDITIONS :

(i) (a) G.M. crops—Sugarcane—G.M. crops. (b) *Sanai*+Soyabean. (c) As per treatments. (ii) (a) Clayey loam. (b) N.A. (iii) 4.1.1955. (iv) (a) 5 ploughings. (b) Flat method. (c) 55 mds./ac. (d) Row to row 3′. (e) Nil. (v) Nil. (vi) BO—17. (vii) Unirrigated. (viii) One weeding and monthly interculturing till earthing up. (ix) 92.28″. (x) 20 to 25.12.1955.

2. TREATMENTS :

All combinations of (1) and (2).
(1) 2 G.M. crops preceding cane : G_1=*Sanai*, G_2=Soyabean.
(2) 6 levels of P_2O_5 : $P_0=0$, $P_1=50$, $P_2=100$, $P_3=150$, $P_4=200$, and $P_5=250$ lb./ac.
P_2O_5 applied as Super to G.M. crops.

3. DESIGN :

(i) R.B.D. (ii) (a) 12. (b) N.A. (iii) 6. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) One row on either side along length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Cane yield. (iv) (a) to (c) No. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 13.56 tons/ac. (ii) 2.55 tons/ac. (iii) None of the effects is significant. (iv) Av. yield of sugarcane in tons/ac.

	P_0	P_1	P_2	P_3	P_4	P_5	Mean
G_1	13.16	12.18	14.15	14.23	14.14	14.58	13.74
G_2	13.28	12.55	12.61	14.14	12.58	15.04	13.37
Mean	13.22	12.37	13.38	14.19	13.36	14.81	13.56

S.E. of G marginal mean = 0.42 ton/ac.
S.E. of P marginal mean = 0.74 ton/ac.
S.E. of body of table = 1.04 ton/ac.

Crop :-Sugarcane. **Ref :- Bh. 56(176).**

Site :- Sugarcane Res. Sub-Stn., Patna. **Type :- 'M'.**

Object :—To study the effects of different sources of N on Sugarcane yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) 20 lb./ac. P_2O_5 as Super. (ii) (a) Clayey. (b) N.A. (iii) 29, 30.12.1956. (iv) (a) Tractor ploughing with mould board and disc plough. (b) Flat method. (c) 60 three-budded setts/row. (d) Rows 3′ apart. (e) Nil. (v) *Sanai* buried at site. (vi) CO—622 (early). (vii) Irrigated. (viii) 4 hoeings and earthing up. (ix) 32.41″. (x) 28 to 31.1.1958.

2. TREATMENTS :

M_0=Control (no manure).
M_1=80 lb./ac. of N as A/S.
M_2=80 lb./ac. of N as compost.
M_3=80 lb./ac. of N as F.Y.M.
M_4=80 lb./ac. of N as castor cake.
M_5=80 lb./ac. of N as T.C.
Manures applied at planting. 40 lb./ac. of N as A/S applied half in May and half at earthing up.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) 3′ along length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Mild attack of borer. (iii) Cane yield. (iv) (a) 1956—contd. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 9.75 tons/ac. (ii) 2.60 tons/ac. (iii) Treatment differences are not significant. (v) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	9.12	10.23	8.54	10.00	10.73	9.89

S.E./mean = 1.06 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 57(164).**

Site :- Sugarcane Res. Sub-Stn., Patna. **Type :- 'M'.**

Object :—To study the effects of different sources of N on Sugarcane yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai*. (c) 20 lb./ac. of P_2O_5 as Super. (ii) (a) Clay. (b) N A. (iii) 1.1.1957 to 3.1.1957. (iv) (a) Tractor ploughings with mould board plough, disc bearing and disc harrowing. (b) Flat method. (c) 64 three-budded setts per row. (d) Rows 3′ apart. (e) Nil. (v) *Sanai* buried in *situ*. (vi) CO—622 (early). (vii) Irrigated. (viii) 4 hoeings and earthing up. (ix) 25.98″. (x) 22 to 23.12.1958.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 56(176) on page 730.

5. RESULTS :

(i) 14.98 tons/ac. (ii) 2.78 tons/ac. (iii) Treatment differences are significant. (iv) Av. yield of sugarcane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	13.61	13.02	15.45	18.77	14.90	14.15

S.E./mean = 1.13 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 59(109).**

Site :- Sugarcane Res. Sub-Stn., Patna. **Type :- 'M'.**

Object :—To study the effect of different sources of N and P on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Heavy clay. (b) N.A. (iii) 6, 7.2.1959. (iv) (a) 4 tractor ploughings with mould board plough. (b) Flat method. (c) 60 mds./ac. (d) Rows 3′ apart. (e) Nil. (v) Nil. (vi) CO—622. (vii) Irrigated. (viii) Hoeing after each irrigation. (ix) 43.53″. (x) 27 to 29.12.1959.

2. TREATMENTS :

M_0=Control (no manure).
M_1=80 lb./ac. of N as A/S.
M_2=80 lb./ac. of N as compost.
M_3=80 lb./ac. of N as F.Y.M.
M_4=80 lb./ac. of N as castor cake.
M_5=80 lb./ac of N as T.C.

Manures applied at planting. 20 lb./ac. of N as A/S in May +20 lb./ac. of N as A/S at earthing + 60 lb./ac. of P_2O_5 as Super given to all plots except control.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) 1 row along the length. (vi) Yes.

4. GENERAL :

(i) Good (ii) Slight borer attack. (iii) Cane yield. (iv) (a) 1954—N.A. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) Nil. (vii) Adverse weather conditions after planting.

5. RESULTS :

(i) 6.46 tons/ac. (ii) 2.33 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	5.15	6.46	7.28	5.68	6.99	7.20

S.E./mean = 0.95 tons/ac.

Crop :- Sugarcane. **Ref. :- Bh. 54(10).**

Site :- Sugarcane Res. Sub-Stn., Patna. **Type :- 'M'.**

Object :- To study the effects of N, P and K on cane yield.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—*Sanai*—Paddy—Sugarcane. (b) Paddy. (c) 40 lb./ac. of N as A/S+60 lb./ac. of P_2O_5 as Super. (ii) (a) Clay. (b) N.A. (iii) 19 to 23.2.1954. (iv) (a) Mould board plough followed by disc harrowing and then levelling. (b) N.A. (c) 64 three-budded sets/row. (d) and (e) N.A. (v) Nil. (vi) CO—622. (vii) Irrigated. (viii) One interculturing. (ix) 36.25″. (x) 16 to 19.1.1955.

2. TREATMENTS :

All combinations of (1), (2) and (3).

(1) 3 levels of N as A/S : N_0=0, N_1=60 and N_2=120 lb./ac.
(2) 3 levels of P_2O_5 as Super : P_0=0, P_1=75 and P_2=150 lb./ac.
(3) 2 levels of K_2O as Mur. Pot. : K_0=0 and K_1=80 lb./ac.

3. DESIGN :

(i) $3^2\times2$ fact. NP and NPK partially confd. (ii) (a) 6 plots/block ; 3 blocks/replication. (b) N.A. (iii) 4. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) One row on all sides. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Germination %, sucrose %, no. of mature stalks, yield at harvest and borer %. (iv) (a) 1954—contd. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 7.43 tons/ac. (ii) 1.84 tons/ac. (iii) Main effects of P and K and interaction N×P×K are highly significant. (iv) Av. yield of cane in tons/ac.

	P_0	P_1	P_2	K_0	K_1	Mean
N_0	8.54	7.57	5.82	7.65	6.95	7.31
N_1	7.68	8.53	5.09	7.53	6.66	7.10
N_2	6.42	8.87	8.39	8.66	7.10	7.89
Mean	7.55	8.32	6.43	7.95	6.90	7.43
K_0	7.76	8.73	7.36			
K_1	7.33	7.89	5.49			

S.E. of N or P marginal mean = 0.37 tons/ac.
S.E. of K maginal mean = 0.30 tons/ac.
S.E. of body of N×P table = 0.70 tons/ac.
S.E. of body of N×K and P×K table = 0.53 tons/ac.

Crop :- Sugarcane. **Ref. :- Bh. 54(9).**

Site :- Sugarcane Res. Sub-Stn., Patna. **Type :- 'M'.**

Object :- To study the effect of P and different sources of N on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—*Sanai*—Paddy—Sugarcane. (b) Paddy. (c) 40 lb./ac. of N as A/S+60 lb./ac. P_2O_5 as Super. (ii) (a) Clay. (b) N.A. (iii) 12.2.1954 to 14.2.1954. (iv) (a) Mould board ploughing followed by disc horrowing and then levelling. (b) N.A. (c) 64 three-budded setts/row. (d) and (e) N.A. (v) Nil. (vi) CO—453. (vii) Irrigated. (viii) 4 interculturings. (ix) 36.42". (x) 17.2.1955 ; 2.3.1955. 3.3.1955.

2. TREATMENTS :

8 manurial treatments : M_0=Control (no manure), M_1=120 lb./ac. of N as castorcake M_2=120 lb./ac. of N as F Y.M.. M_3=60 lb./ac. of N as castorcake+60 lb./ac of N as A/S, M_4=60 lb./ac. of N as F.Y.M.+60 lb./ac. of N as A/S, M_5=40 lb/ac. of N as castorcake +80 lb./ac. N as A/S, M_6=40 lb./ac. of N as F.YM.+80 lb./ac. of N as A/S and M_7=120 lb./ac. of N as A/S.

60 lb./ac. of P_2O_5 as Super is applied to all plots except control.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (ii) 4. (iv) (a) 60.5′×24. (b) 60.5′×18′. (v) One row along length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) No. (iii) Biometric observations and cane yield. (iv) (a) 1954—contd. (b) No. (c) Nil. (v) (a) and(b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 15.82 tons/ac. (ii) 2.61 tons/ac. (iii) Treatment differences are significant. (vi) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7
Av. yield	10.44	13.67	12.08	13.99	13.22	16.47	16.80	14.08.

S.E./mean = 1.30 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 54(12).**

Site :- Sugarcane Res. Sub-Stn., Patna. **Type :- 'M'.**

Object :—To study the effect of P and different sources of N on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—*Sanai*—Sugarcane. (b) *Sanai.* (c) Nil. (ii) Clay. (iii) 30.1.1954 to 1.2.1954. (iv) (a) Mould board ploughing followed by disc harrowing and then levelling. (b) N.A. (c) 64 three-budded setts/row. (d) and (e) N.A. (v) Nil. (vi) CO—453. (vii) Irrigated.. (viii) 4 interculturings. (ix) 37.13″. (x) 16 to 19.2.1955.

2 TREATMENTS :

All combinations of (1) and (2)+control (no manure).

(1) 2 manurial treatments : M_1=Compost+Super, M_2=A/S+Super.

(2) 5 levels of N and P_2O_5 : L_1=40 lb./ac. of N+50 lb./ac. of P_2O_5 L_2=80 lb./ac. of N+100 lb./ac. of P_2O_5, L_3=120 lb./ac. of N+150 lb./ac. of P_2O_5, L_4=160 lb./ac. of N+200 lb./ac. of P_2O_5 and L_5=200 lb./ac. of N+250 lb./ac. of P_2O_5.

3. DESIGN :

(i) R.B.D. (ii) (a) 11. (b) N.A. (iii) 4. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) One row along length. (vi) Yes.

4. GENERAL :

(i) Very good ; no lodging. (ii) Nil. (iii) Biometric observations and cane yield. (iv) (a) 1951—contd. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 19.23 tons/ac. (ii) 6.93 tons/ac. (iii) None of the effects is significant. (iv) Av. yield of cane in tons/ac.

Control = 18.40 tons/ac.

	L_1	L_2	L_3	L_4	L_5	Mean
M_1	20.48	17.43	16.80	20.23	19.15	18.82
M_2	17.38	20.75	21.38	20.17	19.31	19.80
Mean	18.93	19.09	19.09	20.20	19.23	19.31

S.E. of M marginal mean = 1.55 tons/ac.
S.E. of L marginal mean = 2.45 tons/ac.
S.E. of body of M×L table = 3.46 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 55(117).**

Site :- Sugarcane Res. Sub-Stn., Patna. **Type :- 'M'.**

Object :—To study the effects of P and different sources of N on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) G.M.—Sugarcane—G.M. (b) *Sanai.* (c) 20 lb./ac. of P_2O_5 as Super. (ii) (a) Clayey. (b) N.A. (iii) 31.1.1955 to 2.2.1955. (iv) One or two tractor ploughings with mould board and disc plough. (b) N.A. (c) 64 three-budded setts/row. (d) 3′ between rows. (e) N.A. (v) Nil. (vi) CO—453(late). (vii) Irrigated. (viii) 4 hoeings and earthing up. (ix) 47.04″. (x) 14, 16.1.1956.

2. TREATMENTS and 3. DESIGN:

Same as in expt. 54(12) above.

4. GENERAL :

(i) Fair (ii) Mild attack of borer. (iii) Biometric observations and cane yield. (iv) (a) 1951—contd. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 19.52 tons/ac. (ii) 3.36 tons/ac. (iii) Only effect of M is significant. (iv) Av. yield of cane in tons/ac.

Control = 14.44 tons/ac.

	L_1	L_2	L_3	L_4	L_5	Mean
M_1	17.50	17.85	19.36	19.47	17.00	18.24
M_2	20.08	19.02	22.64	22.61	24.75	21.82
Mean	18.79	18.44	21.00	21.04	20.88	20.03

S.E. of M marginal mean = 0.51 tons/ac.
S.E. of L marginal mean = 0.81 tons/ac.
S.E. of body of $M \times L$ table = 1.68 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 56(191).**

Site :- Sugarcane Res. Sub-Stn., Patna. **Type :- 'M'.**

Object :—To find out the effects of N, P and K and their different combinations on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) 20 lb./ac. of P_2O_5 as Super. (ii) (a) Heavy clay. (b) N.A. (iii) 3 to 8.2.1956. (iv) Tractor ploughing with mould board and disc plough before planting. (b) Flat method. (c) 60 mds./ac. (d) Rows 3' apart. (e) Nil. (v) G.M. with *Sanai.* (vi) CO—622 (early). (vii) Irrigated. (viii) Hoeing and earthing up. (ix) 38.70". (x) 24.1.1957 to 2.2.1957.

2. TREATMENTS :

All combinations of (1), (2) and (3)
(1) 3 levels of N as A/S : $N_0=0$, $N_1=80$ and $N_2=120$ lb./ac.
(2) 3 levels of P_2O_5 as Super : $P_0=0$, $P_1=60$ and $P_2=90$ lb./ac.
(3) 3 levels of K_2O as Mur. Pot. : $K_0=0$, $K_1=80$ and $K_2=120$ lb./ac.

3. DESIGN :

(i) 3^3 partially confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) N.A. (iii) 4. (iv) (a) $72.5' \times 21'$. (b) $72.5' \times 15'$. (v) One row on either side along the length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Mild attack of borer. (iii) Cane yield. (iv) (a) 1953—N.A. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 13.76 tons/ac. (ii) 1.94 tons/ac. (iii) Only main effect of N is significant. (iv) Av. yield cane in tons/ac.

	N_0	N_1	N_2	P_0	P_1	P_2	Mean
K_0	13.39	14.12	14.87	14.34	13.43	14.61	14.13
K_1	12.81	14.68	14.15	13.82	13.13	14.69	13.88
K_2	12.13	13.22	14.49	13.81	11.82	14.21	13.28
Mean	12.78	14.01	14.50	13.99	12.79	14.50	13.76
P_0	13.77	13.97	14.63				
P_1	12.15	12.28	13.95				
P_2	12.82	15.77	14.92				

S.E. of any marginal mean = 0.32 tons/ac.
S.E. of body of any table = 0.56 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 58(176).**

Site :- Sugarcane Res. Sub-Stn., Patna. **Type :- 'M'.**

Object :—To study the effects of N, P, K and their combinations on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) (a) Heavy clay. (b) N.A. (iii) 23 to 26.12.1958. (iv) (a) 4 tractor ploughings. (b) Flat method. (c) 60 mds./ac. (d) 3′ between rows. (e) Nil. (v) Nil. (vi) CO—622 (early). (vii) Irrigated. (viii) Hoeing after each irrigation. (ix) 43.53″. (x) 4 to 11.1.1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 56(191) on page 735.

5. RESULTS :

(i) 8.33 tons/ac. (ii) 2.22 tons/ac. (iii) Only the main effect of N is significant. (iv) Av. yield of cane in tons/ac.

	N_0	N_1	N_2	P_0	P_1	P_2	Mean
K_0	7.41	8.28	8.94	7.56	8.53	8.71	8.21
K_1	7.29	9.41	9.15	8.63	8.86	8.35	8.62
K_2	8 01	7.56	8.92	7.73	8.00	8.76	8.16
Mean	7.57	8.42	9.00	7.97	8.46	8.61	8.33
P_0	7.92	6.75	9.25				
P_1	7.84	9.03	8.35				
P_2	6.95	9.47	9.42				

S.E. of any marginal mean = 0.37 ton/ac.
S.E. of body of any table = 0.64 ton/ac.

Crop :- Sugarcane. **Ref :- Bh. 58(289).**

Site :- Sugarcane Res. Sub-Stn., Patna. **Type :- 'M'.**

Object :—To find out the effects of N, P and K on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) 20 lb./ac. of P_2O_5 as Super. (ii) (a) Clay. (b) N.A. (iii) 29.1.1958 to 1.2.1958. (iv) (a) One tractor ploughing with mould board and one with disc plough. (b) Flat method. (c) 75 three-budded setts/row. (d) Rows 3′ apart. (e) Nil. (v) G.M. with *Sanai.* (vi) CO—622 (early). (vii) Irrigated. (viii) 3 hoeings. (ix) 25.98″. (x) 2 to 9.2.1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 56(191) on page 735.

5. RESULTS :

(i) 9.17 tons/ac. (ii) 3.50 tons/ac. (iii) None of the effects is significant. (iv) Av. yield of cane in tons/ac.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	8.70	8.60	9.51	8.46	9.27	9.07	8.93
N_1	9.09	9.92	8.86	9.73	9.60	8.55	9.29
N_2	9.51	8.20	10.15	8.37	8.80	10.70	9.29
Mean	9.10	8.91	9.51	8.85	9.22	9.44	9.17
K_0	8.49	8.56	9.51				
K_1	10.23	8.39	9.05				
K_2	8.57	9.77	9.96				

S.E. of an marginal mean = 0.51 ton/ac.
S.E. of body of any table = 0.88 ton/ac.

Crop :- Sugarcane. **Ref :- Bh. 56(175).**
Site :-Sugarcane Res. Sub-Stn., Patna. **Type :- 'M'.**

Object :—To study the effect of P and different sources of N on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) 20 lb./ac. of P_2O_5 Super. (ii) (a) Clay. (b) N.A. (iii) 24.1.1956. (iv) (a) Tractor ploughing with mould board and disc plough. (b) Rows 3′ apart. (c) 64 three-budded setts per row. (d) Flat method. (e) N.A. (v) *Sanai* buried at site. (vi) CO—453 (late). (vii) Irrigated. (viii) 3 hoeings and earthing up. (ix) 38.70″. (x) 9.2.1957 to 12.2.1957.

2. TREATMENTS :

6 manurial treatments : M_0=Control (no manure), M_1=120 lb./ac. of N as F.Y.M.+60 lb./ac. of P_2O_5 as Super, M_2=60 lb./ac. of N as F.Y.M.+60 lb./ac. of N as A/S+60 lb./ac. of P_2O_5 as Super, M_3=120 lb./ac of N as castorcake+60 lb./ac. of P_2O_5 as Super, M_4=60 lb./ac. of N as A/S+60 lb./ac. of P_2O_5 as castorcake+60 lb./ac. of P_2O_5 as Super and M_5=120 lb./ac. of N as A/S+60 lb./ac. of P_2O_5 as Super.

DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) 3′ along length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Mild attack of borers—no control measures taken. (iii) Cane yield. (iv) (a) to (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 17.80 tons/ac. (ii) 1.98 tons/ac. (iii) Treatment differences are highly significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	15.73	15.73	18.84	19.57	19.57	17.35

S.E./mean = 0.81 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 55(114).**
Site :- Sugarcane Res. Sub-Stn., Patna. **Type :- 'M'.**

Object :—To find out the response of Sugarcane to pressmud application.

1. BASAL CONDITIONS :

(i) (a) G.M.—Sugarcane—G.M. (b) *Sanai.* (c) 20 lb./ac. of P_2O_5 as Super. (ii) (a) Clayey. (b) N.A. (iii) 2.3.1955. (iv) (a) One or two tractor ploughings with mould board and disc plough before planting. (b) N.A. (c) 64 three-budded setts/row. (d) Between rows 3′. (e) N.A. (v) Nil. (vi) BO—11 (early medium). (vii) Irrigated. (viii) 4 hoeings and earthing up. (ix) 47.04″. (x) 11, 12.3.1956.

2. TREATMENTS :

All combination of (1) and (2)+control.

(1) 2 levels of N : N_1=80 and N_2=120 lb./ac.
(2) 2 sources of N : M_1=Sulphitation of pressmud and M_2=Castorcake.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) One row along length. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Mild attack of borer. (iii) Biometric observations and cane yield. (iv) (a) 1952—1955. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 10.68 tons/ac. (ii) 6.50 tons/ac. (iii) None of the effects is significant. (iv) Av. yield of cane in tons/ac.

Control = 9.87 tons/ac.

	M_1	M_2	Mean
N_1	11.53	9.73	10.63
N_2	11.17	11.08	11.13
Mean	11.35	10.40	10.88

S.E. of any marginal mean = 1.86 tons/ac.
S.E. of body of table or control mean = 2.65 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 55(115).**
Site :- Sugarcane Res. Sub-Stn., Patna. **Type :- ‘M’.**

Object :—To find out the effect of N, P and K on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) G.M.—Sugarcane—G.M. (b) *Sanai.* (c) 20 lb./ac. of P_2O_5 as Super. (ii) (a) Clayey. (b) N.A. (iii) 10.2.1955. (iv) (a) One or two tractor ploughings with mould board and disc ploughs before planting. (b) N.A. (c) 64 three-budded setts/row. (d) 3′ between rows. (e) N.A. (v) Nil. (vi) CO—622. (vii) Irrigated. (viii) 4 hoeings and earthing up. (ix) 47.04″. (x) 2 to 9.2.1956.

2. TREATMENTS :

All combinations of (1), (2) and (3).

(1) 3 levels of N as A/S : N_0=0, N_1=80 and N_2=120 lb./ac.
(2) 3 levels of P_2O_5 as Super : P_0=0, P_1=60 and P_2=120 lb./ac.
(3) 3 levels of K_2O as Mur. Pot. : K_0=0, K_1=80 and K_2=120 lb./ac.

3. DESIGN :

(i) 3^3 partially confd. (ii) 9 plots/block ; 3 blocks/replication. (iii) 4. (iv) (a) 72.5′×21′. (b) 72.5′×15′. (v) Two rows along length. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Mild attack of borer. (iii) Biometric observations and cane yield. (iv) (a) 1953—contd. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 13.94 tons/ac. (ii) 2.98 tons/ac. (iii) Main effect of N and interaction P×K are significant. Interactions N×P and N×P×K are highly significant. No other effect is significant. (iv) Av. yield of cane in tons/ac.

	N_0	N_1	N_2	K_0	K_1	K_2	Mean
P_0	13.08	12.42	14.77	15.24	11.67	13.37	13.43
P_1	10.14	13.58	16.93	12.95	14.02	13.66	13.54
P_2	11.92	15.77	14.85	13.01	14.84	16.68	14.84
Mean	11.71	13.92	15.52	13.73	13.51	14.57	13.94
K_0	12.37	12.90	15.93				
K_1	11.36	13.77	15.41				
K_2	11.41	15.09	15.21				

S.E. of any marginal mean = 0.49 tons/ac.
S.E of body of any table = 1.21 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 55(112).**
Site :- Sugarcane Res. Sub-Stn., Patna. **Type :- 'M'.**

Object :—To study the effect of P and different sources of N on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) G.M.—Sugarcane—Paddy. (b) Paddy +Fallow. (c) 10 Srs/ac. of A/S and Super each. (ii) (a) Clayey. (b) N.A. (iii) 5, 6.3.1955. (iv) (a) One or two tractor ploughings with moud board and disc plough before planting. (b) N.A. (c) 64 three-budded setts/row. (d) Between rows 3′. (e) N.A. (v) Nil. (vi) CO—453 (late). (vii) Irrigated. (viii) 4 hoeings and earthing up. (ix) 47.04″. (x) 8, 9.1.1956.

2. TREATMENTS :

6 manurial treatments : M_0=Control, M_1=120 lb./ac. of N as F.Y.M., M_2=60 lb./ac. of N as A/S+60 lb./ac. of N as F.Y.M., M_3=120 lb./ac. of N as castorcake, M_4=60 lb./ac. of N as A/S+60 lb./ac. of N as castorcake and M_5=120 lb./ac. of N as A/S.

60 lb./ac. of P_2O_5 as Super applied to all plots except control.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) One row along length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Slight attack of borers. (iii) Biometric observations and cane yield. (iv) 1951—contd. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 24.51 tons/ac. (ii) 3.90 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	22.59	26.94	23.11	26.18	24.40	23.82

S.E./mean = 1.95 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 59(134).**
Site :- Sugarcane Res. Sub-Stn., Patna. **Type :- 'M'.**

Object :—To find the response of pressmud application on the yield of Sugarcane.

1. BASAL CONDITIONS

(i) (a) Nil. (b) *Sanai*. (c) 20 lb./ac. of P_2O_5 as Super. (ii) Clay. (b) N.A. (iii) 29 and 30 1.1954. (iv) (a) Tractor ploughing with mould board and disc plough. (b) Flat method. (c) 42 three-budded setts/row. (d) Rows 3′ apart. (e) Nil. (v) *Sanai* buried at site. (vi) BO—11. (vii) Irrigated. (viii) 3 hoeings and earthing up. (ix) 36.45″. (x) 5, 6.2.55.

2. TREATMENTS :

4 manurial application : M_0=Control, M_1=Sulphitation of pressmud at 100 mds/ac., M_2=Sulphitation of pressmud at 200 mds/ac. and M_3=120 lb./ac. of N as castorcake.

3. DESIGN :

(i) R.B.D. (ii) 4. (b) N.A. (iii) 6. (iv) (a) 40′×27′. (b) 40′×21′. (v) 3′ along length on each side. (vi) Yes.

4. GENERAL:

(i) Good. (ii) Nil. (iii) Cane yield. (iv) (a) 1954-1955 (modified in 1955). (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 18.98 tons/ac. (ii) 3.71 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3
Av. yield	19.16	19.29	19-04	18.41

S.E./mean = 1.51 tons/ac.

Crop :- Sugarcane. **Ref. :- Bh. 54(103).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'M'.**

Object :—To find out the effect of deep placement of phosphate in calcareous soils on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Soyabean—Wheat—*Sanai*. (b) *Sanai*. (c) Nil. (ii) (a) Clay loam. (b) Refer soil analysis, Pusa. (iii) 1st week of Feb. 1954. (iv) (a) Harrowing once followed by mould board plough. (b) Furrow planting. (c) 60 three-budded setts row. (d) 3′ between rows. (e) N.A. (v) Nil. (vi) BO-11 (early). (vii) Irrigated. (viii) Fortnightly intercultural operations up to May, earthing up in June. (ix) 46.71″. (x) 4th week of January, 1955.

2. TREATMENTS :

9 manurial treatments : M_0=Control (no manure), M_1=75 lb./ac. of P_2O_5, M_2=125 lb./ac. of P_2O_5, M_3=75 lb./ac. of P_2O_5 at a depth of 8″, M_4=125 lb./ac. of P_2O_5 at 8″ depth, M_5=75 lb./ac. of P_2O_5+60 lb./ac. of N at 8″ depth, M_6=125 lb./ac. of P_2O_5+100 lb./ac. of N at 8″ depth, M_7=75 lb./ac. of P_2O_5+60 lb./ac. of N at 4″ depth and M_8=125 lb./ac. of P_2O_5+100 lb./ac. of N at 4″ depth.

N as A/S and P_2O_5 as Super were applied.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) One row on either side along length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Minor incidence of borer noticed. (iii) Biometric observations and cane yield. (iv) (a) 1952—1955. (b) No. (c) Nil. (v) (a) and (b) No. (vi) Crop badly affected by floods. (vii) Nil.

5. RESULTS :

(i) 4.71 tons/ac. (ii) 3.02 tons/ac. (iii) Treatment differences are no significant. (v) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8
Av. yield	6.46	4.55	5.08	3.20	3.73	5.53	5.38	5.31	3.20

S.E./mecn = 1.51 tons/ac.

Crop :- Sugarcane. **Ref. :- Bh. 54(107).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'M'.**

Object :—To study the effect of carbonation and sulphitation on Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Soyabean—Wheat—*Sanai*. (b) *Sanai* (G.M.) (c) Nil. (ii) (a) Clay loam. (b) Refer soil analysis, Pusa. (iii) 4th weak of Feb., 1954. (vi) (a) Harrowing once followed by mould board ploughing each followed by hinga. (b) Furrow planting. (c) 60 three-budded setts/row. (d) 3′ between rows. (e) N.A. (v) Nil. (vi) BO—11 (early). (vii) Irrigated. (viii) Fortnightly intercultural operation till the end of May, earthing up in mid of June. (ix) 47.17″. (x) 2nd week of Feb., 1955.

2. TREATMENTS :

All combinations of (1) and (2)+2 extra treatments.

(1) 3 manures : M_1=Sulphitation of pressmud cake applied 2 months before planting, M_2=Carbonation of pressmud cake applied 2 months before planting and M_3=F.Y.M.

(2) 2 levels of manures : L_1=100 and L_2=200 mds./ac.

Exra treatments : E_0=Control (no manure) and E_1=60 lb./ac. of N as A/S+75 lb./ac. of P_2O_5 as super. All the above six combinations received a basal dressing of E_1.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 8. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) Two rows one on either side. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) Borer incidence noted. Aldrin sprayed. (iii) Biomatric observations and cane yield. (iv) (a) 1954—N.A. (b) and (c) No. (v) (a) and (b) No. (vi) Crop affected by floods. (vii) Nil.

5. RESULTS :

(i) 7.99 tons/ac. (ii) 2.56 tons/ac. (iii) Main effect of L is highly significant, 'Control *vs* others' is significant. (iv) Av. yield of sugarcane in tons./ac.

E_0=6.46 and E_1=5.96 tons./ac.

	M_1	M_2	M_3	Mean
L_1	7.89	6.95	7.64	7.49
L_2	10.59	7.62	10.84	9.68
Mean	9.24	7.29	9.24	8.59

S.E. of M marginal mean = 0.64 tons/ac.
S.E. of L marginal mean = 0.52 tons/ac.
S.E. of body of table = 0.90 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 54(144).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'M'.**

Object :—To study the effect of Copper on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai*. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Pusa. (iii) 21.2.1954. (iv) (a) *Sanai* buried at site by ploughing and 3 more ploughings. (b) Flat method of planting. (c) 64 three-budded setts 1″ row. (d) Rows 1′ apart. (e) —. (v) *Sanai* and 60 lb /ac. of N as A/S+75 lb./ac. of P_2O_5 as Super applied at the time of applying treatments. (vi) BO—21. (vii) Irrigated. (viii) 2 weedings and one hoeing. (ix) 47.23″. (x) 18.2.1955.

2. TREATMENTS :

M_0=Control, M_1=3, M_2=6 and M_3=9 lb./ac. of C/S.

3. DESIGN :

(i) R.B.D. (ii) 4. (b) N.A. (iii) 6. (iv) (a) 60.5′×15′. (b) 60.5′×9′. (v) 3′ along length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Aldrin (40%) in liquid form was sprayed at planting time against termite attack. (iii) Cane yield and no. of mature stalks. (iv) (a) to (c) N.A. (v) (a) and (b) N.A. (v) and (vii) Nil.

5. RESULTS:

(i) 10.69 tons/ac. (ii) 1.37 tons/ac. (iii) Treatment differences are significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3
Av. yield	8.96	13.15	9.48	11.17

S.E./mean = 0.56 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 55(226).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'M'.**

Object :—To study the effect of Cu, Zn, Mn and B on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai*. (c) Nil (ii) (a) Clay loam. (b) Refer soil analysis, Pusa. (iii) 19.1.1955. (iv) (a) 2 ploughings by *desi* plough and one by cultivator. (b) Flat method of planting. (c) 24 three-budded setts/row. (d) Rows 3′ apart. (e) Nil. (v) Nil. (vi) BO—28. (vii) Irrigated. (viii) One weeding and 2 hoeings. (ix) 58.14″. (x) 27.2.1956.

2. TREATMENTS :

5 manurial treatments : M_0=Control (no manure), M_1=5 lb./ac. of Cu as C/S, M_2=5 lb./ac. of Zn as Zn SO_4, M_3=10 lb./ac. of Mn as Mn SO_4 and M_4=10 lb./ac. of B as Borax.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) 24′×18′. (b) 24′×12′. (v) 3′ all along length. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) Nil. (iii) Cane yield and no. of mature stalks. (iv) (a) to (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 11.04 tons/ac. (ii) 0.33 ton/ac. (iii) Treatment differences are significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4
Av. yield	12.67	10.95	10.87	9.55	11.17

S.E./mean = 0.14 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 54(101).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'M'.**

Object :—To compare the effect of singhbhum rockphosphate with other phosphatic fertilizers under calcareous soil conditions on Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Soyabean—Wheat—*Sanai* (G.M.). (b) *Sanai* (G.M.). (c) No. (ii) (a) Alkaline. (b) Refer soil analysis, Pusa. (iii) 3rd week of Feb. 1954. (iv) (a) Harrowing followed by mould board plough each by *hinga* discings followed by sub-soiling each followed by *hinga*. (b) Furrow planting. (c) 60, three-budded setts/row. (d) 3′ between rows. (e) N.A. (v) Nil. (vi) BO—28 (early). (vii) Irrigated. (viii) Fortnightly interculture till the end of May. Earthing up in mid June. (ix) 47.17″. (x) 1st week of Feb. 1955.

2. TREATMENTS :

6 manurial treatments : M_0=Control (no manure), M_1=60 lb./ac. of N as A/S+75 lb./ac. of P_2O_5 as Super, M_2=60 lb./ac. of N as A/S+75 lb./ac. of P_2O_5 ($\frac{2}{3}$ P_2O_5 as Super+$\frac{1}{3}$ P_2O_5 as Rock phos.), M_3=60 lb./ac. of N as A/S+75 lb./ac. of P_2O_5 ($\frac{2}{3}$ P_2O_5 as Rock phos.+$\frac{1}{3}$ P_2O_5 as Super), M_4=60 lb./ac. of N as A/S+75 lb./ac. of P_2O_5 ($\frac{1}{2}$ P_2O_5 as B.M.+$\frac{1}{2}$ P_2O_5 as rock phos) and M_5=60 lb./ac. of N as A/S+75 lb./ac. of P_2O_5 as ammo. phos.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) Two rows one on either side of the plot. (vi) Yes.

4. GENERAL :

(i) Not good. (ii) Minor incidence of borer noted. (iii) Biometric observations and cane yield. (iv) (a) 1954—N.A. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) Crop seriously affected by flood. (vii) Nil.

5. RESULTS :

(i) 6.34 tons/ac. (ii) 2.04 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	7.78	6.39	5.96	5.29	6.88	5.75

S.E./mean = 1.02 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 54(141).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'M'.**

Object :—To study the effect of potash on yield and sucrose content of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai*. (c) Nil. (ii) (a) Light loam. (b) Refer soil analysis, Pusa. (iii) 22.2.1954. (iv) (a) 3 ploughings by mould board plough. (b) Flat method. (c) 64 three-budded setts/row. (d) Rows 3′ apart. (e) N.A. (v) Nil. (vi) BO—21. (vii) Irrigated. (viii) One earthing up and 2 hoeings. (ix) 46.92″. (x) 17.2.1955.

2. TREATMENTS :

9 manurial treatments : M_0=Control (no manure), M_1=60 lb./ac. of N+75 lb./ac. P_2O_5, M_2=M_1+80 lb./ac. of K_2O, M_3=M_1+160 lb./ac. of K_2O, M_4=M_1+240 lb./ac. of K_2O, M_5=120 lb./ac. of N+150 lb./ac. of P_2O_5, M_6=M_5+160 lb./ac. of K_2O, M_7=M_5+240 lb./ac. of K_2O, and M_8=180 lb./ac. of N+225 lb./ac. of P_2O_5+240 lb./ac. of K_2O.

N as A/S, P_2O_5 as Super and K_2O as Mur. Pot. were applied.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 60.5′×15′. (b) 60.5′×9′. (v) 3′ along length. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Aldrin (40%) in emulsion form applied at the time of planting cane against termite attack. (iii) Cane yield and no. of mature stalks. (iv) (a) to (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 15.91 tons/ac. (ii) 1.05 tons/ac. (iii) Treatment differences are significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8
Av. yield	15.06	15.10	15.61	17.78	14.14	18.81	17.34	14.29	15.10

S.E./mean = 0.53 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 57(61).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'M'.**

Object :—To study the effect of potash on the yield and sucrose content of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) Nil. (ii) (a) Light loam. (b) Refer soil analysis, Pusa. (iii) 20.2.1957. (iv) (a) 3 ploughings followed by beamings. (b) Flat method of planting. (c) 64 three-budded setts/row. (d) Rows 3′ apart. (e) Nil. (v) Nil. (vi) BO—21. (vii) Irrigated. (viii) Interculturing by Bihar cultivator, one earthing at the end of July. (ix) 30.17″. (x) 3.3.1958.

2. TREATMENTS :

Same as in expt. no. 54(141) on page 743.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 1/48. (b) 1/80. (v) 2 rows alround the plot. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) No. of mature stalks, sucrose % and cane yield. (iv) (a) to (c) No. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 14.83 tons/ac. (ii) 2.76 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8
Av. yield	12.05	16.04	15.19	16.48	15.87	15.43	13.61	14.11	14.69

S.E./mean = 1.38 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 54(82).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'M'.**

Object :—To study the effect of potash on yield and sucrose content of sugarcane.

1. BASAL CONDITIONS :

(i) (a) G.M.—Sugarcane—G.M. (b) *Sanai.* (c) 75 lb./ac. of P_2O_5 as Super applied at the time of sowing G.M. crop. (ii) (a) Sandy loam. (b) Refer soil analysis, Pusa. (iii) 22.2.1954. (iv) (a) Ploughing with mould board once, discing and planking. (b) to (e) N.A. (v) 100 mds./ac. of compost added at planting. (vi) BO—21 (medium). (vii) Irrigated. (viii) Interculturing twice, weeding twice, earthing and propping. (ix) 45.8″. (x) 25.3.1955.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(141) on page 743.

4. GENERAL :

(i) Fair, no lodging. (ii) Aldrin at 2½ lb./ac. diluted with 100 gallons of water added to soil at the time of planting against termite. (iii) Biometric observations and cane yield. (iv) (a) 1954—1956. (b) No. (c) Nil. (v) (a) and (b) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 15.91 tons/ac. (ii) 2.10 tons/ac. (iii) Treatment differences are significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8
Av. yield	15.06	15.10	15.61	17.78	14.14	18.80	17.34	14.24	15.10

S.E./mean = 1.05 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 55(157).**

Site :- Sugarcane Res Stn., Pusa. **Type :- 'M'.**

Object :—To study the effect of potash on yield and sucrose content of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) G.M.—Sugarcane—G.M. (b) *Sonai*. (c) 75 lb./ac. of P_2O_5 as Super applied at the time of sowing G.M. crop. (ii) (a) Sandy loam. (b) Refer soil analysis, Pusa. (iii) 3.2.1955. (iv) Ploughing with mould board once, discing and planking. (v) 100 mds/ac. of compost applied at planting. (vi) BO—21(medium). (vii) Irrigated. (viii) Interculturing twice weeding twice ; earthing and proping. (ix) 57.70". (x) 31.1.1956.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(141) on page 743.

4. GENERAL :

(i) Fair, no lodging. (ii) Aldrin — 2½ lb./ac. diluted with 100 gallons of water added to soil at the time of planting against termite attack. (iii) Biometric observations and cane yield. (iv) (a) 1954—1956(b) No. (c) Nil. (v) (a) and (b) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 17.04 tons/ac. (ii) 1.88 tons/ac. (iii) Treatment differences are significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8
Av. yield	12.42	17.04	17.48	17.70	15.35	17.56	18.00	19.02	18.81

S.E./mean = 0.94 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 54(140).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'M'.**

Object :—To study the manurial requirements of sugarcane crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai*. (c) Nil. (ii) (a) Light loam. (b) Refer soil analysis Pusa. (iii) 7.11.1954. (iv) (a) 2 ploughings by tractor and one by *desi* plough. (b) Flat *method*. (c) 64 three-budded setts/row. (d) Rows 3' apart. (e) Nil. (v) Nil. (vi) CO—419 (vii) Irrigated. (viii) 2 hoeings and 2 earthings up. (ix) 57.52". (x) 18.1.1955.

2. TREATMENTS :

6 manurial treatments: M_0=Control (no manure), M_1=40 lb./ac. of N as A/S+50 lb./ac. of P_2O_5 as Super, M_2=80 lb./ac. of N as A/S+100 lb./ac. of P_2O_5 as Super, M_3=120 lb./ac. of N as A/S+150 lb./ac. of P_2O_5 as Super, M_4=160 lb./ac. of N as A/S+200 lb./ac. of P_2O_5 and M_5=200 lb./ac. of N as A/S+250 lb./ac. of P_2O_5.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 60.5′×15′. (b) 60.5′×9′. (v) 3′ along length. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) Attack of termite ; 40% Aldrin was sprayed. (iii) Cane yield and no. of mature stalks. (iv) (a) to (c) N.A. (v) (a) and (b) N.A. (vi) Nil. (vii) Nil.

5. RESULTS :

(i) 6.95 tons/ac. (ii, 3.56 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	4.77	4.63	5.58	12.60	9.90	4.19

S.E./mean = 1.78 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 54 (139).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'M'.**

Object :—To find out the best time of application of manures to sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) Nil. (ii) (a) Clay loam. (b) Refer soil analysis, Pusa. (iii) 4.11.1954. (iv) (a) One ploughing by tractor and 2 by *desi* plough. (b) Flat method. (c) 64 three-budded setts/row. (d) Rows 3′ apart. (e) Nil. (v) Nil. (vi) BO—11. (vii) Irrigated. (viii) 2 hoeings and 2 earthings up. (ix) 57.00″. (x) 12.12.1955.

2. TREATMENTS :

5 manurial treatments : M_0=Control (no manure), M_1=Full dose of manure at harvest time, M_2=¾ dose at harvest and ¼ dose at earthing up, M_3=½ dose at harvest and ½ dose at earthing up, M_4=¼ dose at harvest and ¾ dose at earthing up and M_5=Full dose of manure at earthing up.

Manure applied at : 60 lb./ac. of N as A/S+75 lb./ac. of P_2O_5 as Super.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 60.5′×15′. (b) 60.5′×9′. (v) 3′ along length. (vi) Yes.

4. GENERAL :

(i) Ordinary. (ii) Nil. (iii) Cane yield and no. of mature stalks. (iv) (a) to (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 12.28 tons/ac. (ii) 1.30 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons /ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	11.31	13.96	14.32	11.61	12.34	10.14.

S.E./mean = 0.65 tons/ac.

Crop :- Sugarcane. **Ref. :- Bh. 55 (224).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'M'.**

Object :—To study effect of spray application of fertilizers on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) Nil. (ii) (a) Clay loam. (b) Refer soil analysis, Pusa. (iii) 8.2.1955. (vi) (a) 2 ploughings by mould board and one by cultivator. (b) Flat method of planting. (c) 64 three-budded setts/row. (d) Rows 3′ apart. (e) Nil. (v) Nil. (vi) BO—22. (vii) Irrigated. (viii) 3 hoeings and 2 weedings. (ix) 57.44″. (x) 31.1.1956.

2. TREATMENTS :

4 manurial treatments : M_0=Control (no manure), M_1=Spray application of 40 lb./ac. of P_2O_5 as Super in 4 instalments of 10 lb./ac. of P_2O_5 each in June, July, August and September and 50 lb./ac. of $(NH_4)_2SO_4$ applied in soil at planting, M_2= Spray application of 20 lb./ac. of P_2O_5 as Super in 4 instalments of 5 lb./ac. of P_2O_5 each in June,July, August and September+20 lb./ac. of P_2O_5 and 50 lb./ac. of $(NH_4)_2SO_4$ applied in soil at planting, M_3=40 lb./ac. of P_2O_5 as Super +50 lb./ac. of N as A/S applied to soil at planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) 3′ along length. (vi) Yes.

4. GENERAL :

(i) Average. (ii) N.A. (iii) Cane yield and no. of mature stalks. (iv) (a) to (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 13.40 tons/ac. (ii) 0.47 tons/ac. (iii) Treatment differences are sigificant. (iv) Av. yield of cane in tons./ac.

Treatment	M_0	M_1	M_2	M_3
Av. yield	12.47	13.06	15.18	12.89.

S.E./mean = 0.24 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 56(197).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'M'.**

Object :- To study the effect of spray application of fertilizers on yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) Nil. (ii) (a) Light loam. (b) Refer soil analysis, Pusa. (iii) 12.2.1956. (iv) (a) 1 ploughing by tractor and 2 by *desi* plough. (b) Flat method. (c) 64, three-budded setts/row. (d) Rows 3′ apart. (e) Nil. (v) Nil. (vi) BO—11. (vii) Irrigated. (viii) 1 weeding and 3 hoeings. (ix) 57.54″. (x) 14.2.1957.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 55(224) above.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Cane yield and no. of mature stalks. (iv) (a) to (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 13.81 tons/ac. (ii) 0.91 tons/ac. (iii) Treatment differences are significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3
Av. yield	15.28	14.77	11.79	13.41

S.E./mean = 0.45 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 55(194).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'M'.**

Object :- To study the best time of application of manures to Sugarcane crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Sugarcane. (c) 60 lb./ac. of A/S+75 lb./ac. of super and G.M. (ii) (a) Sandy loam. (b) Refer soil analysis, Pusa. (iii) 4.1.1955. (iv) (a) One ploughing with mould board. (b) Flat method. (c) 60 mds./ac. (d) 3′ apart (rows). (e) Nil. (v) N.A. (vi) CO—419 (late). (vii) Irrigated. (viii) 5. interculturings with 5-tyred cultivator, weeding, earthing up in mid.June. (ix) 57.03″. (x) 23.1.1956.

2. TREATMENTS :

6 manurial treatments : M_0=Control (no manure), M_1=60 lb./ac. of A/s+75 lb./ac. of Super, at planting $M_2=\frac{3}{4}$th dose of M_1 at planting+$\frac{1}{4}$th at earthing up, $M_3=\frac{1}{2}$ M_1 at planting+$\frac{1}{2}$ M_1 at earthing up, $M_4=\frac{1}{4}$ M_1 at planting+$\frac{3}{4}$th M_1 earthing up and M_5=Full dose of M_1 at earthing up.

3. DESIGN :

(i) R.B D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 1/30 ac. (b) 1/40 ac. (v) One row on either side. (vi) Yes.

4. GENERAL :

(i) Not good. (ii) Nil. (iii) Cane yield, no. of mature stalks and sucrose %. (iv) (a) 1955—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 3.33 tons/ac. (ii) 0.76 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	2.97	3.82	3.01	3.56	3 30	3.34

S. E./mean=0.38 tons/ac.

Crop :- Sugarcane. **Ref. :- Bh. 55 (193).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'M'.**

Object :—To compare the effects of different phosphates and their combinations under calcareous soil conditions on Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) Nil. (ii) (a) Clay loam. (b) Refer soil analysis, Pusa. (iii) 4.2.1955. (iv) (a) One disc ploughing, disc harrowing, one mould board ploughing and Sub soiling. (b) Flat method. (c) 50 mds./ac. (d) Rows 3′ apart. (e) Nil. (v) Nil. (vi) BO—28 (medium). (vii) Irrigated. (viii) 5 interculturings with 5-tyred cultivator and weeding, earthing up in last week of June. (ix) 57.03″. (x) 14.2.1956.

2. TREATMENTS :

8 manurial treatments : M_0=Control (no manure), M_1=75 lb./ac. of Super, M_2=50 lb./ac. of Super+25 lb./ac. of rock Phos., M_3=25 lb./ac. of Super+50 lb./ac. of Rock. Phos., M_4=50 lb./ac. of Super+25 lb./ac. of B.M., M_5=25 lb./ac. of Super+50 lb./ac. of B.M., M_6=75 lb./ac. of rock phos. and M_7=75 lb./ac. of B.M.

60 lb./ac. of A/S were given to all plots except control.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 1/30. ac. (b) 1/40 ac. (v) One row on either side. (vi)) Yes.

4. GENERAL :

(i) Not good. (ii) Nil. (iii) No. of mature, stalks, canes yield and sucrose %. (iv) (a) 1954—N.A. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) Heavy flood at peak period of growth. (vii) Nii.

5. RESULTS :

(i) 13.51 tons/ac. (ii) 2.05 tons/ac. (iii) Treatment differences are not Significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7
Av. yield	11.82	13.39	15.38	12.18	15.49	12.11	15.45	11.96.

S.E./mean = 1.02 tons/ac.

Crop :- Suagrcane. **Ref. :- Bh. 54 (110).**

Site -: Sugarcane Res. Stn., Pusa. **Type :- 'M'.**

Object :—To find out the effect of N, P and K on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Maize—Sugarcane—*Sanai.* (b) *Sanai.* (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Pusa. (iii) 29,31.1.1954. (iv) (a) 4 ploughings crosswise with *desi* plough followed by *hinga.* (b) Furrow planting. (c) 60 three-budded setts/row. (d) 3′ between rows. (e) Nil. (v) Nil. (vi) BO—11 (early). (vii) Irrigated. (viii) Fortnightly intercultural operation after germination till the end of May. Earthing up in middle of June. (ix) 47.48″. (x) 15 to 26.1.1955.

2. TREATMENTS :

All combinations of (1) (2) and (3)

(1) 3 levels of N as A/S : $N_0=0$, $N_1=40$ and $N_2=80$ lb./ac.
(2) 3 levels of P_2O_5 as Super : $P_0=0$, $P_1=50$ and $P_2=100$ lb./ac.
(3) 3 levels of K_2O as Mur. Pot : $K_0=0$, $K_1=80$ and $K_2=160$ lb./ac.

3. DESIGN :

(i) 3^3 with second order interaction partially confd. (ii) (a) 9 plots/blcok 3 blocks/replication. (b) N.A. (iii) 4. (iv) (a) 80′×18′. (b) 80′×12′. (v) Two rows one on either side. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Borer incidence noted. Dead hearts removed during the early period of the growth Aldrin applied at planting to control termite. (iii) Biometric observations and cane yield. (iv) (a) 1949—contd. (b) Yes. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 17.47 tons/ac. (ii) 6.91 tons/ac. (iii) Only the main effect of N is highly significant. (iv) Av. yield of cane in tons/ac.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	16.60	15.50	13.70	15.39	14.84	15.54	15.27
N_1	17.74	17.15	16.64	18.04	16.82	16.64	17.17
N_2	18.59	19.76	21.60	19.40	21.05	19.47	19.98
Mean	17.64	17.47	17.31	17.61	17.57	17.22	17.47
K_0	17.56	18.07	17.23				
K_1	19.39	17.41	15.91				
K_2	15.94	16.93	18.77				

S.E. of any marginal mean = 1.15 tons/ac.
S.E. of body of any table = 1.99 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 54(111).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'M'.**

Object :—To find out the effect of N, P and K on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Maize—Sugarcane—*Sanai.* (b) Maize. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis Pusa. (iii) 29 to 31.1.1954. (iv) (a) Four ploughings crosswise with *desi* plough and one with soil inverting each followed by *hinga.* (b) Furrow planting. (d) 3′ between rows. (c) 60 three-budded setts. (e) Nil. (v) Nil. (vi) BO—11 (early). (vii) Irrigated. (viii) Fortnightly intercultural operation after germination till the end of May ; earthing up in mid-June. (ix) 47.48″. (x) 15 to 26.1.1955.

2. TREATMENTS to 4. GENERAL :

Same as in expt. 54(110) on page 749.

5. RESULTS :

(i) 11.76 tons/ac. (ii) 4.86 tons/ac. (iii) Only main effect of N is highly significant. (iv) Av. yield of cane in tons/ac.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	8.99	8.52	10.25	9.70	9.33	9.11	9.25
N_1	11.94	10.95	10.69	11.02	11.02	11.57	11.20
N_2	13.08	14.47	16.86	14.88	14.36	15.21	14.82
Mean	11.34	11.31	12.60	11.87	11.57	11.96	11.76
K_0	11.46	12.79	11.25				
K_1	11.02	10.58	13.11				
K_2	11.53	10.87	13.44				

S.E. of any marginal mean = 0.81 tons/ac.
S.E. of body of any table = 1.40 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 55(204).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'M'.**

Object :—To find out the effect of N, P and K on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Maize. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Pusa. (iii) 16, 18.11.1955. (iv) (a) One mould board ploughing and 4 ploughings with *desi* plough. (b) Flat method. (c) 50 mds./ac. (d) Rows 3′ apart. (e) Nil. (v) Nil. (vi) BO—11 (medium). (vii) Irrigated. (viii) 5 interculturings with 5-tyred cultivator and one earthing up. (ix) 57.03″. (x) 2 to 6.3.1956.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54 (110) on page 749.

4. GENERAL :

(i) Fair. (ii) Rat menace checked by application of poisonous gas Aldrin (40%) in liquid form sprayed over field at time of planting against termite attack. (iii) No. of mature stalks, sucrose% and cane yield (iv) (a) 1954—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 14.33 tons/ac. (i) 2.94 tons/ac. (iii) Main effects of N and P alone are significant. (iv) Av. yield of cane in tons/ac.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	12.12	13.51	13.17	12.63	12.45	13.72	12.93
N_1	14.16	14.14	15.85	13.87	15.29	14.98	14.72
N_2	14.05	16.02	15.97	15.06	16.55	14.42	15.34
Mean	13.44	14.56	15.00	13.85	14.76	14.37	14.33
K_0	12.94	13.51	15.92				
K_1	14.23	14.73	15.33				
K_2	13.16	15.43	14.54				

S.E. of any marginal mean = 0.49 tons/ac.
S.E. of body of any table = 0.85 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 55(201).**
Site :- Sugarcane Res. Stn., Pusa. **Type :- 'M'.**

Object :—To study the effects of N, P and K on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) *Sanai*—Sugarcane. (b) *Sanai*. (c) Nil. (ii) (a) Light loam. (b) Refer soil analysis, Pusa. (iii) 16, 17.1.1955. (iv) (a) One mould bound ploughing, disc ploughing, harrowing and planking. (b) Flat method. (c) 50 mds/ac. (d) 3′ between rows. (e) Nil. (v) G.M. applied. (vi) BO—11 (medium). (vii) Irrigated. (viii) 5 times interculturing by 5-tyred Bihar cultivator ; weedings and earthing up in the last week of June. (ix) 57.03″. (x) 14 to 20.1.1956.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(110) on page 749.

4. GENERAL :

(i) Fair. (ii) Field rat menace was checked by cyno-gas. Aldrin (40%) liquid 2½ lbs. dissolved in 50 gallons of water applied at planting against termite attack. (iii) No. of mature stalks, sucrose content and cane yield. (iv) (a) 1950—contd. (b) Yes. (c) Nil. (v) and (vii) Nil.

5. RESULTS :

(i) 15.98 tons/ac. (ii) 5.32 tons/ac. (iii) Only the main effect of N is significant. (iv) Av. yield of cane in tons/ac.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	13.90	15.47	15.08	14.77	15.21	14.44	14.82
N_1	14.52	16.27	17.11	15.36	15.41	17.13	15.97
N_2	16.94	17.01	17.55	15.97	18.69	16.85	17.17
Mean	15.12	16.25	16.58	15.37	16.44	16.14	15.98
K_0	13.76	15.99	16.34				
K_1	16.56	15.99	16.75				
K_2	15.04	16.77	16.65				

S.E. of any marginal mean = 0.89 tons/ac.
S.E. of body of any table = 1.53 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 56(233).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'M'.**

Object :—To find out the effects of N, P and K on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) *Sanai*—Sugarcane. (b) *Sanai*. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Pusa. (iii) 16 to 20.1.1956. (iv) (a) 2 ploughings by tractor and two by mould board plough. (b) Flat method. (c) 90 three-budded setts/row. (d) Rows 3′ apart. (e) Nil. (v) *Sanai* buried at site. (vi) BO—11. (vii) Irrigated. (viii) 2 weedings and one hoeing. (ix) 58.46″. (x) 12 to 15.2.1957.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(110) on page 749.

4. GENERAL :

(i) Poor. (ii) Aldrin 40% in liquid form was sprayed at planting against possible termite attack. (iii) Cane yield and no. of mature stalks. (iv) (a) 1951—contd. (b) and (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 7.64 tons/ac. (ii) 2.46 tons/ac. (iii) Main effects of N and P are significant. (iv) Av. yield of cane in tons/ac.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	5.42	7.64	7.04	5.65	7.20	7.25	6.70
N_1	7.63	7.78	8.52	7.71	8.57	7.65	7.98
N_2	6.49	8.47	9.77	8.51	8.27	7.94	8.24
Mean	6.51	7.96	8.44	7.29	8.01	7.61	7.64
K_0	6.05	7.60	8.23				
K_1	6.63	9.08	8.32				
K_2	6.85	7.21	8.78				

S.E. of any marginal mean = 0.41 tons/ac.
S.E. of body of any table = 0.71 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 56(232).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'M'.**

Object :—To find out the effects of N, P and K on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Maize—Sugarcane. (b) Maize. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Pusa. (iii) 13 to 16.1.1956. (iv) (a) 2 ploughings by *desi* plough followed by one mould board plough. (b) Flat method. (c) 90 three-budded setts/row. (d) Rows 3′ apart. (e) Nil. (v) Nil. (vi) BO—11. (vii) Irrigated. (viii) 2 weedings and hoeing. (ix) 58.46″. (x) 17, 18.2.1956.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(110) on page 749.

4, GENERAL :

(i) Poor. (ii) Aldrin 40% in liquid form was sprayed at planting time against possible termite attack. (iii) Cane yield and no. of mature stalks. (iv) (a) to (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 6.16 tons/ac. (ii) 1.00 tons/ac. (iii) Main effects of N, P and interaction N×P are significant. No other effect is signficant. (iv) Av. yield of cane in tons/ac.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	4.26	4.47	4.11	3.65	4.53	4.66	4.28
N_1	4.59	6.98	8.20	6.23	6.51	7.03	6.59
N_2	6.66	7.39	8.79	7.80	7.49	7.55	7.61
Mean	5.17	6.28	7.03	5.89	6.18	6.41	6.16
K_0	4.94	6.02	6.71				
K_1	4.81	6.94	6.78				
K_2	5.75	5.88	7.61				

S.E. of any marginal mean = 0.17 tons/ac.
S.E. of body of any table = 0.29 tons/ac.

* * *

Crop :- Sugarcane. **Ref :- Bh. 57(111).**
Site :- Sugarcane Res. Stn., Pusa. **Type :- 'M'.**

Object :—To find out the effects of N, P and K on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Maize—Sugarcane—Maize. (b) Maize. (c) Nil. (ii) (a) Light loam. (b) Refer soil analysis, Pusa. (iii) 28.1.57 to 4.2.1957. (iv) (a) 2 mould board ploughings followed by disc harrowing. (b) Flat method. (c) 50 mds./ac. (d) Rows 3′ apart (e) Nil. (v) Nil. (vi) BO–11. (vii) N.A. (viii) 5 interculturings with 5-tyred cultivators. (ix) 30.92″. (x) 14.3.1958.

2. TREATMENTS and 3. DESIGN:

Same as in expt. no. 54(110) on page 749.

4. GENERAL :

(i) Poor. (ii) Nil. (iii) No. of mature stalks and cane yield. (iv) (a) 1954—contd. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) None. (vii) Nil.

5. RESULTS :

(i) 1.64 tons/ac. (ii) 1.11 tons/ac. (iii) None of the effects is significant. (iv) Av. yield of cane in tons/ac.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	0.73	1.31	1.51	1.20	1.30	1.05	1.18
N_1	0.87	1.79	2.33	1.62	1.70	1.67	1.66
N_2	1.35	1.78	3.09	1.96	2.06	2.19	2.07
Mean	0.98	1.63	2.31	1.59	1.69	1.64	1.64
K_0	0.98	1.59	2.20				
K_1	1.03	1.63	2.40				
K_2	0.94	1.65	2.31				

S.E. of any marginal mean = 0.19 tons/ac.
S.E. of body of any table = 0.32 tons/ac.

* * *

Crop :- Sugarcane. **Ref :- Bh. 57(112).**
Site :- Sugarcane Res. Stn., Pusa. **Type :- 'M'.**

Object :—To find out the effects of N, P and K on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) *Sanai*—Sugarcane. (b) *Sanai.* (c) Nil. (ii) (a) Light loam. (b) Refer soil analysis, Pusa. (iii) 28.1.1957 to 4.2.1957. (iv) (a) One mould board ploughing followed by disc harrowing. (b) Flat method. (c) 50 mds./ac. (d) Row to row 3′. (e) Nil. (v) G.M. with *Sanai.* (vi) BO—11. (vii) Unirrigated. (viii) to (x) N.A.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(110) on page 749.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Biometric observations and cane yield. (iv) (a) 1954—contd. (b) No. (c) Nil (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3.98 tons/ac. (ii) 1.84 tons/ac. (iii) Main effect of P is highly significant. (iv) Av. yield of cane in tons/ac.

	P_0	P_1	P_2	Mean	K_0	K_1	K_2
N_0	2.71	4.80	3.73	3.75	3.29	4.12	3.83
N_1	2.82	3.95	4.72	3.83	4.54	3.86	3.09
N_2	2.56	5.79	4.73	4.36	4.51	3.97	4.61
Mean	2.70	4.85	4.39	3.98	4.11	3.98	3.84
K_0	3.12	5.12	4.10				
K_1	2.96	4.64	4.34				
K_2	2.00	4.79	4.74				

S.E. of any marginal mean = 0.31 tons/ac.
S.E. of body of any table = 0.53 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 58(104).**
Site :- Sugarcane Res. Stn., Pusa. **Type :- 'M'.**

Object :—To study the effects of N, P and K in short term rotation of Sugarcane with Maize.

1. BASAL CONDITIONS :

(i) (a) Maize—Sugarcane—Maize. (b) Maize. (c) Nil (ii) (a) Light loam. (b) Refer soil analysis, Pusa. (iii) 15 to 17.1.1958. (iv) (a) 2 mould board ploughings followed by disc harrowing. (b) Flat method. (c) 60 mds./ac. (d) Rows 3′ apart. (e) Nil. (v) Nil. (vi) BO—17. (vii) Irrigated. (viii) 5 times interculturings with 5-tyred cultivator. (ix) 46.88″. (x) 12.3.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(110) on page 749.

4. GENERAL :

(i) Ordinary. (ii) Nil. (iii) No. of mature stalks and cane yield. (iv) (a) 1954—contd. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 10.76 tons/ac. (ii) 2.06 tons/ac. (iii) Main effect of N is significant. (iv) Av. yield of cane in tons/ac.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	8.24	8.37	9.89	8.45	9.44	8.62	8.83
N_1	10.65	10.63	10.10	9.66	10.79	10.93	10.46
N_2	12.60	12.40	13.97	12.99	13.03	12.95	12.99
Mean	10.50	10.47	11.32	10.37	11.09	10.83	10.76
K_0	10.66	10.06	10.37				
K_1	10.42	11.03	11.80				
K_2	10.41	10.31	11.79				

S.E. of any marginal mean = 0.34 tons/ac.
S.E. of body of any table = 0.59 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 58(105).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'M'.**

Object :—To study the effects of N, P and K on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) *Sanai*—Sugarcane. (b) *Sanai.* (c) Nil. (ii) (a) Light loam. (b) Refer soil analysis, Pusa. (iii) 18, to 20.1.1958. (iv) (a) One mould board ploughing followed by disc harrowing. (b) Flat method. (c) 60 mds./ac. (d) Row to row 3′. (e) Nil. (v) Nil. (vi) BO—17. (vii) Irrigated. (viii) 5 interculturings with 5-tyred cultivator. (ix) and (x) N.A.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(110) on page 749.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Biometric observations and cane yield. (iv) (a) 1954—contd. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 13.05 tons/ac. (ii) 3.16 tons/ac. (iii) Main effect of N and interaction N×P, P×K are highly significant. No other effect is significant. (iv) Av. yield of cane in tons/ac.

	P_0	P_1	P_2	Mean	K_0	K_1	K_2
N_0	10.57	10.41	11.72	10.90	11.55	10.52	10.63
N_1	12.15	12.11	13.74	12.66	12.63	12.91	12.45
N_2	15.55	15.38	15.83	15.59	16.75	15.46	14.55
Mean	12.76	12.63	13.76	13.05	13.64	12.96	12.54
K_0	13.05	13.14	14.74				
K_1	13.04	12.53	13.32				
K_2	12.17	12.23	13.22				

S.E. of any marginal mean = 0.53 tons/ac.
S.E. of body of any table = 0.91 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 59(173).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'M'.**

Object :— To study the effects of N, P and K on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Maize—Sugarcane. (b) Maize. (c) Nil. (ii) (a) Light loam. (b) Refer soil analysis, Pusa. (iii) 4 to 8.2.1959. (iv) (a) One tractor ploughing and 2 ploughings by *desi* plough. (b) Flat method of planting (c) 90 three-budded setts/row. (d) Rows 3" apart. (e) Nil. (v) Nil. (vi) BO—11. (vii) Irrigated. (viii) 2 weedings and earthing up. (ix) 47.25" (x) 12 to 14.3.1960.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(110) on page 749.

4. GENERAL :

(i) Poor. (ii) 5 % wettable dust of Aldrin was applied at the time of planting against possible attack of stem borers. (iii) Cane yield and no. of mature stalks. (iv) and (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 9.04 tons/ac. (ii) 0.92 tons/ac. (iii) Only main effect of N is highly significant. (iv) Av. yield of cane in tons/ac.

	P_0	P_1	P_2	K_0	K_1	K_2	Mean
N_0	6.06	5.95	6.57	6.24	6.46	5.87	6.19
N_1	7.71	10.28	10.35	8.70	10.20	9.47	9.45
N_2	9.91	12.77	11.74	12.26	10.17	11.96	11.47
Mean	7.89	9.67	9.55	9.07	8.94	9.10	9.04
K_0	8.11	9.47	9.62				
K_1	8.00	9.51	9.32				
K_2	7.56	10.02	9.73				

S.E. of any marginal mean = 0.15 tons/ac.
S.E. of body of any table = 0.26 tons/ac.

Crop :- Sugarcane. **Ref. :- Bh. 59 (215).**

Site :- Sugarcane Res. Stn , Pusa. **Type :- 'M'.**

Object :—To study the effects of N, P and K on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—*Sanai*—Sugarcane. (b) *Sanai*. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Pusa. (iii) 4 to 8.2.1959. (iv) (a) 2 ploughing by mould board and plough and one by *desi* plough. (b) Flat method of planting. (c) 90 three-budded setts/row. (d) Rows 3' apart. (e) Nil. (v) *Sanai* buried in situ. (vi) BO—17. (vii) Irrigated. (viii) 2 weedings and 2 hoeings. (ix) 45.05". (x) 18.2.1960.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54 (110) on page 749.

4. GENERAL :

(i) Poor. (ii) 5% wettable dust of Aldrin was applied at 20 lb./ac. against possible borer attack. (iii) Cane yield. (iv) (a) 1953—contd. (b) Yes. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

. R5ESULTS :

(i) 13.32 tons/ac. (ii) 1.18 tons/ac. (iii) Main effects of N and P are highly significant. No other effect is significant. (iv) Av. yield of cane in tons/ac.

	P_0	P_1	P_2	Mean	K_0	K_1	K_2
N_0	8.67	10.58	10.25	9.83	9.33	10.36	9.81
N_1	10.98	12.64	14.62	12.75	13.66	12.45	12.12
N_2	15.28	17.41	19.47	17.39	16.34	17.59	18.22
Mean	11.64	13.54	14.78	13.32	13.11	13.47	13.38
K_0	11.06	13.22	15.06				
K_1	12.19	14.51	13.66				
K_2	11.68	12.93	15.57				

S.E. of any marginal mean = 0.19 tons/ac.
S.E. of body of any table = 0.34 tons/ac.

Crop :- Sugarcane. **Ref. :- Bh. 54 (138)**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'M'.**

Object :—To study the effect of different levels and sources of N on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) Nil. (ii) (a) Clay loam. (b) N.A. (iii) 9,10.2.1954. (iv) (a) 2 ploughings by mould board plough. (b) Flat method. (c) 64 three-budded setts/row. (d) Rows 3′ apart. (e) Nil. (v) Nil. (vi) BO—17. (vii) Irrigated. (viii) One hoeing and one weeding. (ix) 47.17″. (x) 25.2.1955.

2. TREATMENTS :

All combinations of (1) and (2)+a control (no mannre)
(1) 4 sources of N : S_1=A/S, S_2=A/S/N, S_3=G.N.C. and S_4=Castorcake.
(2) 2 levels of N and P_2O_5 : L_1=60 lb./ac. of N+75 lb./ac. of P_2O_5 and L_2=120 lb./ac. of N+150 lb./ac. of P_2O_5.
P_2O_5 applied as Super.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) 3′ along length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Cane yield and no. of mature stalks. (iv) (a) 1954—contd. (b) and (c) N.A. (v) (a) and (b) N.A. (vi) Nil. (vii) N.A.

5. RESULTS :

(i) 22.61 tons./ac. (ii) 2.04 tons./ac. (iii) Main effect of S, interaction S×L and 'control *vs* others' are highly significant. (iv) Av. yield of cane in tons./ac.

	S_1	S_2	S_3	S_4	Mean
L_1	20.00	21.34	23.76	24.96	22.52
L_2	23.84	22.63	24.68	26.29	24.36
Mean	21.92	21.99	24.22	25.63	23.44

S.E. of S marginal mean = 0.72 tons./ac.
S.E. of L marginal mean = 0.51 tons./ac.
S.E. of body of S×L table or control mean = 1.02 tons./ac.

Crop :- Sugarcane. **Ref :- Bh. 55(178).**

Site :- Sugarcane Res. Stn. Pusa. **Type :- 'M'.**

Object :—To study the effect of different levels and sources of N on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) G.M.—Sugarcane—G.M.—Wheat. (b) Sugarcane. (c) 60 lb./ac. of N as A/S+75 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy loam. (b) Refer soil analysis, Pusa. (iii) 9, 10.2.1955. (iv) (a) One ploughing with mould board plough through the ridges after harvesting of the main crop followed by sub-soiling. (b) Ridge planting. (c) 15000 three-budded setts/ac. (d) Rows 1′ apart. (e) Nil. (v) Nil. (vi BO—17 (medium) (vii) Irrigated. (viii) N.A. (ix) 57.03″. (x) 14.2.1956.

2. TREATMENTS :

Same as in expt. no. 54(138) on page 757.

3. DESIGN :

(i) R.B D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 1/30th ac. (b) 1/40th ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Nil. (iii) Cane yield, count of mature stalks and sucrose %. (iv) (a) 1954—contd. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 12.60 tons/ac. (ii) 2.05 tons/ac. (iii) Only 'control *vs.* others' is highly significant. (iv) Av. yield of cane in tons/ac.

Control = 9.77 tons/ac.

	S_1	S_2	S_3	S_4	Mean
L_1	12.34	11.02	13.52	12.60	12.37
L_2	13.19	13.95	11.49	15.46	13.52
Mean	12.77	12.49	12.50	14.03	12.95

S.E. of S marginal mean = 0.72 tons/ac.
S.E. of L marginal mean = 0.51 tons/ac.
S.E. of body of table or control mean = 1.03 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 55(179).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'M'.**

Object :—To study the effect of different levels and sources of N on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i)(a) G.M.—Sugarcane—G.M.—Wheat. (b) *Sanai.* (c) Nil. (ii) (a) Clay loam. (b) Refer soil analysis, Pusa. (iii) 5.2.1955. (iv) (a) One disc ploughing, disc harrowing, one mould board ploughing, and sub-soiling and levelling. (b) Ridge planting. (c) 15000 three-budded setts/row. (d) Rows 1′ apart. (e) N.A. (v) Nil. (vi) BO—28 (medium). (vii) Irrigated. (viii) 5 interculturings and weedings, earthing up in last week of June 1955. (ix) 57.03″. (x) 23.2.1956.

2. TREATMENTS :

Same as in expt. no. 54(138) on page 757.

3. DESIGN:

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 1/30 ac. (b) 1/40 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Cane yield, counting of mature stalk and sucrose %. (iv) (a) 1954—contd, (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 11.68 tons/ac. (ii) 4.46 tons/ac. (iii) None of the effects is significant. (iv) Av. yield of cane in tons/ac.

Control = 8.52 tons/ac.

	S_1	S_2	S_3	S_4	Mean
L_1	12.16	11.61	12.67	12.56	12.25
L_2	12.49	10.03	13.26	11.83	11.90
Mean	12.33	10.82	12.97	12.19	12.08

S.E. of S marginal mean = 1.57 tons/ac.
S.E. of L marginal mean = 1.12 tons/ac.
S.E. of body of table or control mean = 2.23 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 56(196).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'M'.**

Object :—To study the effect of different levels and sources of N on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Sannhemp. (c) Nil. (ii) (a) Light loam. (b) Refer soil analysis, Pusa. (iii) 10.2.1956. (iv) (a) 2 ploughings by mould board plough and one by cultivator. (b) Flat method. (c) 64 three-budded setts/row. (d) Rows 3′ apart. (e) Nil. (v) Nil. (vi) BO—28. (vii) Irrigated. (viii) to (x) N.A.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(138) on page 757.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Cane yield and no. of mature stalks. (iv) (a) to (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 15.47 tons/ac. (ii) 1.41 tons/ac. (iii) None of the effects is significant. (iv) Av. yield of cane in tons/ac.

Control = 14.88 tons/ac.

	S_1	S_2	S_3	S_4	Mean
L_1	13.04	16.90	14.88	15.35	15.04
L_2	16.27	15.68	16.76	15.39	16.03
Mean	14.66	16.29	15.82	15.37	15.54

S.E. of S marginal mean = 0.50 tons/ac.
S.E. of L marginal mean = 0.35 tons/ac.
S.E. of body of table or control mean = 0.71 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 57(55).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'M'.**

Object :—To study the effect of different sources and levels of N on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) G.M.—Sugarcane—G.M. (b) *Sanai*. (c) Nil. (ii) (a) Light loam. (b) N.A. (iii) 3.1.1957. (iv) (a) 2 ploughings by mould board plough followed by disc harrowing. (b) Flat planting. (c) 50 mds./ac. (d) Rows 3′ apart. (e) N.A. (v) Nil. (vi) BO—28. (vii) Irrigated. (viii) One interculture by 5-tyred Bihar cultivator. (ix) 34.22″. (x) 12.2.1958.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(138) on page 757.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) No. of mature stalks, sucrose % and cane yield. (iv) (a) 1954—contd. (b) No. (c) Nil. (v) (a) Harinagar, Narkatiaganj, Majhaulia, Motihari. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 2.53 tons/ac. (ii) 2.06 tons/ac. (iii) Main effect of S alone is significant. (iv) Av. yield of cane in tons/ac.

Control = 12.49 tons/ac.

	S_1	S_2	S_3	S_4	Mean
L_1	13.30	10.47	11.64	13.22	12.16
L_2	14.47	11.72	12.56	12.86	12.90
Mean	13.89	11.10	12.10	13.04	12.53

S.E. of S marginal mean = 0.73 tons/ac.
S.E. of L marginal mean = 0.52 tons/ac.
S.E. of body of table or control mean = 1.03 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 58(25).**
Site :- Sugarcene Res. Stn., Pusa. **Type :- 'M'.**

Object :— To study the effect of P_2O_5 and different sources of N on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) G.M. (c) Nil. (ii) (a) Light loam. (b) N.A. (iii) 10.2.58. (iv) (a) One ploughing followed by disc harrowing. (b) Flat method. (c) 50 mds/ac. (d) 3′ between rows. (e) Nil. (v) Nil. (vi) BO—14. (vii) Irrigated. (viii) 5 times interculturing with 5-tyred Bihar cultivator and earthing up in the last week of June. (ix) 46.75″. (x) 7.3.1959.

2. TREATMENTS :

Same as in expt. no. 54(138) on page 757.

3. DESIGN

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 1/30 th/ac. (b) 1/40 th/ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Nil. (iii) Cane yield, germinations, tillers and no. of mature Stalks. (iv) (a) 1956—contd. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 18.06 tons/ac. (ii) 2.29 tons/ac. (iii) Main effect of L and interaction L×S are highly significant. (iv) Av. yield of cane in tons/ac.

Control = 16.90 tons/ac.

	S_1	S_2	S_3	S_4	Mean
L_1	15.94	15.91	19.43	15.94	16.81
L_2	19.32	20.75	18.81	19.58	19.61
Mean	17.63	18.33	19.12	17.76	18.21

S.E. of S marginal mean = 0.81 tons/ac.
S.E. of L marginal mean = 0.57 tons/ac.
S.E. of body of table or control mean = 1.15 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 57(57).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'M'.**

Object :— To study the effect of micro elements on growth, yield and juice quality of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Light loam. (b) N.A. (iii) 6.3.1957. (iv) (a) 3 ploughing by mould board plough followed by sub-soiling. (b) Flat planting. (c) 43 setts/row. (d) Row 3′ apart. (e) Nil. (v) 60 lb./ac. of N as A/S + 75 lb./ac. of P_2O_5 as Super at the time of planting. (vi) BO—17. (vii) Irrigated. (viii) 5 times interculturing. (ix) 30.17″. (x) 12.3.1957.

2. TREATMENTS :

All combinations of (1) and (2) + a control.

(1) 2 Micro elements : M_1 = Molybdenum as Sod. molybdate and M_2 = Vanadium as Vanadium Pentaoxide.

(2) 4 levels of micro elements : $L_1 = \frac{1}{2}$, $L_2 = 1$ $L_3 = 1\frac{1}{2}$ and $L_4 = 2$ lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 3. (iv) (a) 0.013 ac. (b) 0.007. (v) One row alround. (vi) Yes

4. GENERAL :

(i) Normal. (ii) Nil. (iii) No. of mature stalks, sucrose %, cane yield. (iv) (a) to (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 5.93 tons/ac. (ii) 1.34 tons/ac. (iii) No effect is significant. (iv) Av. yield of cane in tons/ac.

Control = 7.20 tons/ac.

	L_1	L_2	L_3	L_4	Mean
M_1	4.37	5.55	7.02	5.40	5.59
M_2	6.02	5.18	6.02	6.58	5.95
Mean	5.20	5.36	6.51	5.99	5.77

S E. of M marginal mean = 0.39 tons/ac.
S.E. of L marginal mean = 0.55 tons/ac.
S.E. of body of the table or control mean = 0.77 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 57(58).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'M'.**

Object :—To study the effect of micro-elements on growth, yield and juice quality of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) 50 lb./ac. of P_2O_5 as super. (ii) (a) Clayey loam. (b) Refer soil analysis, Pusa. (iii) 7.3.1957. (iv) (a) 3 times ploughed by mould board plough and sub-soiling. (b) Flat planting. (c) 60 three-budded setts/row. (d) Rows 3′ apart. (e) Nil. (v) 60 lb./ac. of N as A/S+75 lb./ac. of P_2O_5 as Super at planting. (vi) BO—17. (vii) Irrigated. (viii) One interculturing and earthing up. (ix) 37.89″. (x) 8.2.1958.

2. TREATMENTS :

All combination of (1) and (2)+control.

(1) 2 micro-elements : M_1=Zinc and M_2=Copper.

(2) 5 levels of micro-elements : $L_1=1$, $L_2=2$, $L_3=3$, $L_4=4$ and $L_5=5$ lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 11. (b) N.A. (iii) 3. (iv) (a) 38.5′×15′. (b) 38.5′×9′. (v) One row on either side of the plot lengthwise. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) No. of mature stalks, sucrose % and cane yield. (iv) (a) 1955—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 4.96 tons/ac. (ii) 3.24 tons/ac. (iii) No effect is significant. (iv) Av. yield of cane in tons/ac.

Control=5.99 tons/ac.

	L_1	L_2	L_3	L_4	L_5	Mean
M_1	8.74	2.76	4.15	5.03	2.94	4.72
M_2	6.17	4.59	5.91	3.38	4.92	4.99
Mean	7.45	3.67	5.03	4.21	3.93	4.86

S.E. of M marginal mean = 0.84 tons/ac.
S.E. of L marginal mean = 1.32 tons/ac.
S.E. of body of table or control mean = 1.87 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 57(59).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'M'.**

Object :—To study the effects of micro-elements on growth, yield and juice quality of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) 50 lb./ac. of P_2O_5 as super (ii) (a) Heavy loam. (b) Refer soil analysis, Pusa. (iii) 4.3.1957. (iv) (a) 3 ploughings followed by beaming. (b) Flat planting. (c) 60 three-budded setts/row. (d) Rows 3′ apart (e) Nil. (v) 60 lb./ac. of N as A/S+75 lb./ac. of P_2O_5 as Super at planting. (vi) BO—17. (vii) Irrigated. (viii) Interculturing and earthing once. (ix) 37.89″. (x) 9.2.1958.

2. TREATMENTS :

All combinations of (1) and (2)+control.

(1) 2 micro-elements : M_1=Boron as Borax and M_2=Manganese as Manganese sulphate.

(2) 5 level of micro-elements ; $L_1=2$, $L_2=4$, $L_3=6$, $L_4=8$ and $L_5=10$ lb./ac.

3. DESIGN :

(i) R.B D. (ii) (a) 11. (b) N.A. (iii) 3. (iv) (a) 38.5′×15′. (b) 38.5′×12′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) No. of mature stalks, sucrose% and cane yield. (iv) 1955—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 12.27 tons/ac. (ii) 3.05 tons/ac. (iii) No effect is significant. (iv) Av. yield of cane in tons/ac.

Control = 11.17 tons/ac.

	L_1	L_2	L_3	L_4	L_5	Mean
M_1	10.87	11.61	16.31	11.75	10.47	12.20
M_2	10.47	12.34	11.61	10.62	17.74	12.56
Mean	10.67	11.97	13.96	11.18	14.11	12.38

S.E. of M marginal mean = 0.79 tons/ac.
S.E. of L marginal mean = 1.25 tons/ac.
S.E. of body of table or control mean = 1.76 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 59(134).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'M'.**

Object :—To study the effect of P and different sources of N on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) Nil. (ii) (a) Clay loam. (b) Refer soil analysis, Pusa. (iii) 2.3.1959 to 3.3.1959. (iv) (a) 1 ploughing by tractor and 2 by mould board plough. (b) Flat method. (c) 64 three-budded setts/row. (d) Rows 3′ apart. (e) Nil. (v) Nil. (vi) BO—28. (vii) Irrigated. (viii) One hoeing and 2 interculturings. (ix) 56.25″. (x) 27.1.1961.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(138) on page 757.

4. GENERAL :

(i) Good. (ii) Mild attack of stem borer—Endrine sprayed. (iii) Cane yield and no. of mature stalks. (iv) (a) to (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 20.94 tons ac. (ii) 2.10 tons/ac. (iii) 'Control *vs.* others' effect alone is significant. (iv) Av. yield of cane in tons/ac.

Control = 18.25 tons/ac.

	S_1	S_2	S_3	S_4	Mean
L_1	20.02	20.13	21.93	20.69	20.69
L_2	22.48	22.41	20.72	21.87	21.87
Mean	21.25	21.27	21.33	21.28	21.28

S.E. of S marginal mean = 0.74 tons/ac.
S.E. of L marginal mean = 0.53 tons/ac.
S.E. of body of table or control mean = 1.05 tons/ac.

Crop :- Sugarcane **Ref :- Bh. 57(60).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'M'.**

Object :—To compare carbonation and sulphitation of pressmud cakes with F.Y.M. against a standard dose of manure for sugarcane.

1. BASAL CONDITIONS :

(i) (a) *Sanai*—Sugarcane—*Sanai.* (b) *Sanai.* (c) Nil. (ii) (a) Clayey loam. (b) Refer soil analysis, Pusa. (iii) 10,11.3.1957. (iv) (a) 3 ploughings followed by beaming. (b) Flat method. (c) 50 mds/ac. (d) Rows 3′ apart. (e) Nil. (v) Nil. (vi) BO—11. (vii) N.A. (viii) Interculturing with Bihar cultivators. (ix) 30.17″. (x) 8.3.1958.

2. TREATMENTS :

8 manurial treatments : M_0=No manure, M_1=60 lb./ac. of N as A/S+75 lb./ac. of P_2O_5 as super (control) M_2=Sulphitation of pressmud at 100 mds./ac. 2 months before planting+standard manure at planting, M_3=Sulphitation of pressmud at 200 mds/ac. 2 months before planting+standard manure at planting, M_4=Carbonation of pressmud at 100 mds/ac. 2 months before planting+standard manure ½ before planting+½ after planting. M_5=carbonation of pressmud at 200 mds/ac. 2 months before planting+standard manure ½ before planting+½ after planting M_6=F.Y.M. at 100 mds/ac. 2 months before planting+standard manure ½ before planting+½ after planting and M_7=F.Y.M. at 200 mds/ac. 2 months before planting+standard manure ½ before planting+½ after planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 6. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) 2 outer rows. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) No major incidence of pests. (iii) Biometric observations and cane yield. (iv) (a) 1955—1957. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 5.30 tons/ac. (ii) 3.00 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7
Av. yield	3.60	6.98	6.54	5.44	3.86	4.96	5.69	5.29

S.E./mean = 1.22 tons/ac.

Crop :- Sugarcane. **Ref. :- Bh. 58(28).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'M'.**

Object :- To study the effects of different sources of N and P on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) *Sanai* (G.M.)—Sugarcane—G.M. (b) *Sanai.* (c) Nil. (ii) (a) Light loam. (b) Refer soil analysis, Pusa. (iii) 12.2.1958. (iv) (a) 2 ploughings by mould board followed by disc harrowing. (b) Flat method. (c) 50 mds./ac. (d) Rows 3′ apart. (e) N.A. (v) Nil. (vi) BO—28. (vii) Irrigated. (viii) 5 interculturings with 5-tyred Bihar cultivator. (ix) 46.85″. (x) 14.3.1959.

2. TREATMENTS :

All combinations of (1) and (2)+a control

(1) 3 levels of N : S_1=60 lb./ac. of N as A/S, S_2=60 lb./ac. of N as cake and S_3=30 lb./ac. of N as A/S+30 lb./ac. of N as cake.

(2) 2 sources of 75 lb./ac. of P_2O_5 : P_1=Dical Phos. and P_2=Super.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) 2 rows alround the plot. (iv) Yes.

4. GENERAL :

(i) Poor. (ii) Nil. (iii) Biometric observations and cane yield. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 20.92 tons/ac. (ii) 2.66 tons/ac. (iii) 'Only control *vs.* others' effect is significant. (iv) Av. yield of cane n tons/ac.

Control = 17.45 tons/ac.

	S_1	S_2	S_3	Mean
P_1	20.53	22.52	22.48	21.84
P_2	21.31	21.64	20.83	21.26
Mean	20.92	22.08	21.66	21.50

S.E. of S marginal mean = 0.94 tons/ac.
S.E. of P marginal mean = 0.77 tons/ac.
S.E. of body of table or control mean = 1.33 tons/ac.

Crop :- Sugarcane. **Ref. :- Bh. 56(101).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'M'.**

Object :- To study the effect of A/S and different sources of P on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sonai.* (c) Nil. (ii) (a) Heavy loam. (b) Refer soil analysis, Pusa. (iii) 8.2.1956. (iv) (a) 3 ploughing by mould board plough followed by disc harrowing. (b) Flat planting. (c) 50 mds./ac. (d) Rows 3′ apart. (e) Nil. (v) Nil. (vi) BO—28. (vii) Irrigated. (viii) Interculturing with 5-tyred Bihar cultivator. (ix) 55.45″. (x) 16, 17.1.1957.

2. TREATMENTS :

8 manurial treatments : M_0=Control (no manure), M_1=75 lb./ac. of P_2O_5 as Super, M_2=50 lb./ac. of P_2O_5 as Super+25 lb./ac. of P_2O_5 as rock phos., M_3=25 lb./ac. of P_2O_5 as Super+25 lb./ac. of P_2O_5 as B. M., M_4=50 lb./ac. of P_2O_5 as Super+25 lb./ac. of P_2O_5 as B. M., M_5=25 lb./ac. of P_2O_5 as Super+50 lb./ac. of P_2O_5 as B.M., M_6=75 lb./ac. of P_2O_5 as rock phos. and M_7=75 lb./ac. of P_2O_5 as B.M.

60 lb./ac. of N as A/S applied to all plots except control.

3. DESIGN :

(i) R B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) 2 rows along length. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) No. of mature stalks, sucrose % and cane yield. (iv) (a) 1955—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 9.31 tons/ac. (ii) 2.06 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7
Av. yield	8.45	10.58	9.40	8.45	8.45	11.20	8.30	9.66.

S.E./mean = 1.03 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 57(50).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'M'.**

Object :—To study the effects of different sources of P and A/S on the yield of sugarcane.

1. BASAL CONDITIONS :

(i) (a) *Sanai*—Sugarcane—*Sanai.* (b) *Sanai.* (c) Nil. (ii) (a) Clayey. (b) Refer soil analysis, Pusa. (iii) 26.2.1957. (iv) (a) One mould board ploughing followed by disc harrowing. (b) Flat planting. (c) 50 mds./ac. (d) Rows 3′ apart. (e) Nil (v) Nil. (vi) BO—28. (vii) N.A. (viii) One interculturing with 5-tyred Bihar plough. (ix) 30.20″. (x) 18.3.1958.

2. TREATMENTS

8 manurial treatments : M_0 = Control, M_1=75 lb./ac. P_2O_5 as Super, M_2=50 lb./ac. of P_2O_5 as Super+25 lb./ac. of P_2O_5 as Rock Phos, M_3=25 lb./ac. of P_2O_5 as Super+75 lb./ac. of P_2O_5 as rock phos., M_4=50 lb./ac. of P_2O_5 as Super+25 lb./ac. of P_2O_5 as B.M., M_5=25 lb./ac. of P_2O_5 as Super+50 lb./ac of P_2O_5 as B.M., M_6=75 lb./ac. of P_2O_5 as rock phos. and M_7=75 lb./ac. of P_2O_5 as B M.

60 lb./ac. of N as A/S applied to all plots except control.

3. DESIGN :

(i) R B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) 2 rows along length. (vi) Yes.

4. GENERAL :

(i) Ordinary. (ii) Nil. (iii) No. of mature stalks, sucrose % and cane yield. (iv) (a) 1958—1959. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 8.41 tons/ac. (ii) 3.8 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7
Av. yield	6.39	8.15	8.08	10.58	8.93	7.49	9.81	7.86.

S.E./mean = 1.93 tons/ac.

Crop :- Sugarcane. **Ref. :- Bh. 55(184).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'M'.**

Object:—To compare carbonation and Sulphitation of pressmud with F.Y.M. against a standard dose of manure for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) G.M.—Sugarcane—*Urid*—Wheat. (b) *Sanai.* (c) 40 lb./ac. of P_2O_5 as Super. (ii) (a) Clay loam. (b) Refer soil analysis, Pusa. (iii) 6 to 9.2.1955. (iv) (a) One disc ploughing, disc harrowing, one mould board ploughing, sub soiling and levelling. (b) Ridge planting. (c) 15000 three-budded setts/ac. (d) Rows 1′ apart. (e) Nil. (v) As per treatments. (vi) BO—11 (medium). (vii) Irrigated. (viii) 4 interculturings and weeding. (ix) 57.03″. (x) 12 to 15.12.1955.

2. TREATMENTS :

All combinations of (1) and (2)+ 2 extra treatments

(1) 3 manures for B.D. : S_1=Sulphitation of pressmud, S_2=Carbonation of pressmud and S_3=F.Y.M.

(2) 2 levels of B.D. : L_1=100 and L_2=200 mds./ac.

Extra treatments : T_0=Control, T_1=Standard manure of 60 lb./ac. of N as A/S+75 lb./ac. of P_2O_5 as Super applied at planting,

B.D. given two months before planting. All plots under the combinations (1) and (2) also receive the standard manure T_1.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 8. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Borer incidence—Endrine was sprayed. (iii) Cane yield, no. of mature stalks and sucrose %. (iv) (a) 1954—contd. (b) and (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 15 07 tons/ac. (ii) 3.07 tons/ac. (iii) 'Only T_0 *vs.* others' effect is highly significant. (iv) Av. yield of cane in tons/ac.

T_0 = 11.68 and T_1=14.43 tons/ac.

	S_1	S_2	S_3	Mean
L_1	16.38	16.71	15.46	16.18
L_2	13.88	15.50	16.49	15.29
Mean	15.13	16.11	15.98	15.74

S.E. of S marginal mean = 0.77 tons/ac.
S.E. of L marginal mean = 0.63 tons/ac.
S.E. of body of table or control mean = 1.08 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 56(106).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'M'.**

Object :— To compare carbonation and Sulphitation of pressmud cakes with F.Y.M. against a standard dose of manure for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) *Sanai*—Sugarcane—*Sanai*. (b) *Sanai* (swept away by flood). (c) N.A. (ii) (a) Heavy loam. (b) Refer soil analysis, Pusa. (iii) 15.2.1956. (iv) (a) 3 ploughings by mould board plough followed by disc harrowing. (b) Flat planting. (c) 64 three-budded setts/row. (d) Rows 3′ apart. (e) Nil. (v) As per treatments. (vi) BO—11. (vii) Irrigated. (viii) Interculture by Bihar cultivator. (ix) 57.44″. (x) 1.3.1957.

2. TREATMENT :

Same as in expt. no. 55(184) on page 766.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 8. (iv) (a) 1/30 ac. (a) 1/40 ac. (v) 3′ on both sides along length. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) Nil. (iii) No. of mature stalks, sucrose % and cane yield. (iv) (a) 1954—contd. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) Plots water logged for a long time. (vii) Nil.

5. RESULTS :

(i) 12.59 tons/ac. (ii) 1.21 tons/ac. (iii) 'Only control *vs.* rest' effect is highly significant. (iv) Av. yield of cane in tons/ac.

T_0 = 11.28 and T_1 = 12.60 tons/ac.

	S_1	S_2	S_3	Mean
L_1	13.30	12.71	11.79	12.60
L_2	12.49	13.19	13.37	13.02
Mean	12.89	12.95	12.58	12.81

S.E. of S marginal mean = 0.30 tons/ac.
S.E of L marginal mean = 0.35 tons/ac.
S.E. of body of table or control mean = 0.43 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 56(105).**
Site :- Sugarcane Res. Stn., Pusa. **Type :- 'M'.**

Object :— To study the effect of G. M. on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) *Sanai*—Sugarcane—*Sanai*. (b) As per treatments. (c) Nil. (ii) (a) Light loam. (b) Refer soil analysis, Pusa. (iii) 25 to 27.1.1956. (iv) (a) One ploughing by mould board plough followed by disc harrowing. (b) Flat method of planting. (c) 60 mds./ac. (d) Rows 3′ apart. (e) Nil. (v) Nil. (vi) BO—17. (vii) Irrigated. (viii) Interculturing with Bihar cultivator and earthing up in end of July. (ix) 57.16″. (x) 23.1.1957.

2. TREATMENT :

All combinations of (1) and (2) + a control (no manure).
(1) 5 G.M. crops : G_1 = *Sanai*, G_2 = *Moong*, G_3 = *Metha*, G_4 = *Urid* and G_5 = Soyabean.
(2) 2 method of application of P_2O_5 : L_1=To cane crop at planting and L_2=To G.M. crop at sowing. P_2O_5 applied at 50 lb./ac. as Super.

3. DESIGN :

(i) R.B.D. (ii) (a)11. (b) N.A. (iii) 4. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) 2 rows along length. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) No. of mature stalks, sucrose %, and cane yield. (iv) (a) 1955—1957. (b) No. (c) Nil. (v) (a) None. (b) —. (vi) and (vii) Nil.

5. RESULT :

(i) 16.05 tons/ac. (ii) 1.47 tons/ac. (iii) Only main effect of G is significant. (iv) Av. yield of cane in tons/ac.

Control = 15.32 tons/ac.

	G_1	G_2	G_3	G_4	G_5	Mean
L_1	17.88	15.61	14.88	16.79	15.32	16.10
L_2	16.60	15.87	14.40	16.71	17.08	16.13
Mean	17.24	15.74	14.64	16.75	16.20	16.12

S.E. of G marginal mean = 0.52 tons/ac.
S.E. of L marginal mean = 0.33 tons/ac.
S.E. of body of table or control mean = 0.74 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 57(54).**
Site :- Sugarcane Res. Stn., Pusa. **Type :- 'M'.**

Object :—To study the effect of G.M. on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) As per treatments. (c) Nil. (ii) (a) Light loam. (b) Refer soil analysis, Pusa. (iii) 11.2.1957. (iv) (a) 2 ploughings by mould board plough. (b) Flat method of planting. (c) 60 mds./ac. (d) Rows 3′ apart. (e) Nil. (v) Nil. (vi) BO—17. (vii) Irrigated. (viii) Interculturing with 5-tyred Bihar cultivator and earthing in last week of June. (ix) 30.17″. (x) 8.3.1958.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 56(105) on page 768.

3. GENERAL :

(i) Normal. (ii) Nil. (iii) No. of mature stalks, sucrose % and cane yield. (iv) (a) 1955—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 11.34 tons/ac. (ii) 1.46 tons/ac. (iii) None of the effects is significant. (iv) Av. yield of cane in tons/ac.

Control = 11.76 tons/ac.

	G_1	G_2	G_3	G_4	G_5	Mean
L_1	11.35	12.24	10.73	12.24	10.17	11.35
L_2	12.12	11.17	10.76	11.13	11.06	11.25
Mean	11.74	11.71	10.75	11.69	10.62	11.30

S.E. of G marginal mean = 0.52 tons/ac.
S.E. of L marginal mean = 0.33 tons/ac.
S.E. of body of table or control mean = 1.23 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 58(23).**
Site :- Sugarcane Res. Stn., Pusa. **Type :- 'M'.**

Object :—To study the effect of G.M. on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) G.M.—Sugarcane. (b) G.M. crop. (c) Nil. (ii) (a) Light loam. (b) Refer soil analysis, Pusa. (iii) 20.1.1958. (iv) (a) One ploughing by mould board followed by disc harrowing. (b) Flat method. (c) 60 mds./ac. (d) Rows 3′ apart. (e) Nil. (v) Nil. (vi) BO—17. (vii) Irrigated. (viii) 5 interculturings with 5-tyred Bihar cultivator and earthing up. (ix) 47.37″. (x) 24.1.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 56(105) on page 768.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Germination, cane yield and no. of mature stalks. (iv) (a) 1955—1958. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 22.51 tons/ac. (ii) 3.35 ton/ac. (iii) None of the effects is significant. (iv) Av. yield of cane in tons/ac.

Control = 21.01 tons/ac.

	G_1	G_2	G_3	G_4	G_5	Mean
L_1	20.68	23.32	22.66	23.62	22.00	22.46
L_2	23.28	22.66	22.11	22.04	24.24	22.87
Mean	21.98	22.99	22.39	22.83	23.12	22.66

S.E. of G marginal mean = 1.18 tons/ac.
S.E. of L marginal mean = 0 75 tons/ac.
S.E. of body of table or control mean = 1.68 tons/ac.

Crop :- Sugarcane. **Ref :- Bh 56(104).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'M'.**

Object :—To compare the effect of compost with A/S in combination with Super on Sugarcane.

1. BASAL CONDITIONS :

(i) (a) *Sanai*—Sugarcane—*Sanai*. (b) *Sanai*. (c) Nil. (ii) (a) Heavy loam. (b) Refer soil analysis, Pusa. (iii) 4.2.1956. (iv) (a) One ploughing by mould board plough followed by disc harrowing. (b) Flat method. (c) 50 mds./ac. (d) Rows 3′ apart. (e) Nil. (v) Nil. (vi) BO—35. (vii) Irrigated. (viii) Interculturing with 5-tyred Bihar cultivator. (ix) 57.54″. (x) 16.2.1957 to 25.2.1957.

2. TREATMENTS :

4 manurial treatments : M_0=Control, M_1=60 lb./ac. of N as compost+75 lb./ac. of P_2O_5 as Super, M_2=30 lb./ac. of N as A/S+75 lb./ac. of P_2O_5 as Super+30 lb./ac. of N as compost and M_3=60 lb./ac. of N as A/S+75 lb./ac. of P_2O_5 as Super.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) 2 rows along length. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Biometric observations and cane yield. (iv) (a) 1956—contd. (b) No. (c) Nil. (v) (a) Harinagar, Narkatiaganj, Majhaulia and Motipur. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 12.47 tons/ac. (ii) 1.11 tons/ac. (iii) Treatment differences are highly significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3
Av. yield	10.69	11.86	13.48	13.85

S.E./mean = 0.45 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 57(52).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'M'.**

Object :— To study the effect of Super, compost and A/S on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) *Sanai*—Sugarcane—*Sanai*. (b) *Sanai*. (c) Nil. (ii) (a) Clayey loam. (b) Refer soil analysis, Pusa. (iii) 26 and 27.2.1957. (iv) (a) One ploughing by mould board plough followed by disc harrowing. (b) Flat method of planting. (c) 50 mds./ac. (d) Rows 3′ apart. (e) N.A. (v) Nil. (vi) BO—35. (vii) N.A. (viii) Interculturing with 5-tyred Bihar cultivator, earthing once in the last week of June. (ix) 30.20″. (x) 15.3.1958.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no 56(104) above.

4. GENERAL :

(i) Poor. (ii) Nil. (iii) No. of mature stalks, sucrose % and cane yield. (iv) (a) 1956—contd. (b) No. (c) Nil. (v) (a) Harinagar, Narkatiaganj, Majhaulia and Motihari. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 5.83 tons/ac. (ii) 1.46 tons/ac. (iii) Treatment differences are significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3
Av. yield	6.39	5.03	4.74	7.16

S.E./mean = 0.60 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 58(26).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'M'.**

Object :— To study the effect of Super, compost and A/S on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) G.M.—Sugarcane. (b) *Sanai.* (c) Nil. (ii) (a) Light loam. (b) Refer soil analysis, Pusa. (iii) 7.2.1958. (iv) (a) One ploughing. (b) Flat method of planting. (c) 60 mds./ac. (d) 3′ between rows. (e) Nil. (v) Nil. (vi) BO—17. (vii) Irrigated. (viii) 5 times interculturing with 5-tyred Bihar cultivator. (ix) 46.75″. (x) 8.2.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 56(104) on page 770.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Yield, germination, no. of tillers and mature stalks. (iv) (a) 1956—contd. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(I) 16.29 tons/ac. (ii) 2.94 tons/ac. (iii) Treatment differences are highly significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3
Av. yield	11.39	18.84	17.01	17.92

S.E./mean = 1.20 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 59(49).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'M'.**

Object :— To study the effect of Super, compost and A/S on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) Nil. (ii) (a) Light loam. (b) Refer soil analysis, Pusa. (iii) 4.3.1959. (iv) (a) One ploughing by mould board plough followed by discing harrowing and planting. (b) Flat method. (c) 50 mds./ac. (d) 3′ between rows. (e) Nil. (v) Nil. (vi) BO—35. (vii) Irrigated. (viii) 5 interculturings by 5-tyred Bihar cultivator and earthing up in the last week of June. (ix) and (x) N.A.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 56(104) on page 770.

5. RESULTS :

(i) 12.04 tons/ac. (ii) 2.01 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3
Av. yield	11.20	13.46	10.97	12.51

S.E./mean = 0.82 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 55(180).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'M'.**

Object :—To study the effect of spray application of phosphate at different stages of growth.

1. BASAL CONDITIONS :

(i) (a) G.M.—Sugarcane—Wheat. (b) *Sanai.* (c) 3 mds/ac. of Super. (ii) (a) Clay loam. (b) Refer soil analysis, Pusa. (iii) 12 to 17.2.1955. (iv) (a) One disc ploughing, disc harrowing, one ploughing with mould board. (b) Ridge planting. (c) 1500 three-budded setts/ac. (d) Rows 1′ apart. (e) N.A. (v) 6 lb./ac. of N as A/S. (vi) BO—22 (medium). (vii) Irrigated. (viii) 4 interculturings and weedings. Earthing up in the middle of June. (ix) 57.03″. (x) 4 to 7.2.1956.

2. TREATMENTS :

M_0=Control (no manure).
M_1=10 lb./ac. of P_2O_5 in May+10 lb./ac. of P_5O_5 in June.
M_2=10 lb./ac. of P_5O_5 in June+10 lb./ac. of P_2O_5 in July.
M_3=10 lb./ac. of P_2O_5 in July+10 lb./ac. of P_2O_5 in August.
M_4=’0 lb./ac. of P_2O_5 in August+10 lb./ac. of P_2O_5 in September.
M_5=20 lb./ac of P_2O_5 at planting to soil.
P_2O_5 applied as Super dissolved in water.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 1/30th ac. (b) 1/40 th ac. (v) 2 outer rows within gross plot were treated as border rows. (vi) Yes.

4. GENERAL :

(i) Average. (ii) Nil. (iii) Biometric observations and cane yield. (iv) (a) 1955—contd. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 11.65. tons/ac. (ii) 1.18 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	12.19	11.68	10.32	11.13	12.38	12.19

S.E./mean = 0.59 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 56(103).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'M'.**

Object :—To study the effect of spray application of P during different periods of growth of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) Nil. (ii) (a) Heavy loam. (b) Refer soil analysis, Pusa. (iii) 5.2.1956. (iv) (a) 3 ploughings followed by beaming. (b) Flat method of planting. (c) 60 three-budded setts/row. (d) Rows 3′ apart. (e) Nil. (v) 60 lb./ac. of N as A/S. (vi) BO—22. (vii) Irrigated. (viii) One interculture by Bihar cultivator. (ix) 57.50″. (x) 17.2.1957.

2. TREATMENTS :

Same as in expt. no. 55(180) above.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 60.4′×24′. (b) 60.4′×18′. (v) 2 rows along length. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) Nil. (iii) No. of mature stalks, sucrose %, and sugarcane yield. (iv) (a) 1955—contd. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) There was water logging in plots for several days. (vii) Nil.

5. RESULTS :

(i) 6.80 tons/ac. (ii) 0.31 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av yield	6.46	7.05	6.79	7.02	6.65	6.83

S.E./mean = 0.16 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 56(99).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'M'.**

Object :—To find out the effective number of spray applications of phosphate during the growth of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) Nil. (ii) (a) Heavy loam. (b) Refer soil analysis, Pusa. (iii) 6.2.1956. (iv) (a)One ploughing with mould board plongh followed by disc harrowing. (b) Flat method of planting. (c) 50 mds/ac. (d) Rows 3′ apart. (e) Nil. (v) Nil. (vi) BO—22. (vii) Irrigated. (viii) 5 interculturings with 5-tyred Bihar cultivator and earthing up in the last week of June. (ix) 57.54″. (x) 27.3.1957.

2. TREATMENTS :

6 manurial treatments : M_0=Control (no manure), M_1=full dos of P_2O_5 in May, M_2=$\frac{1}{2}$ dose in May+$\frac{1}{2}$ in June, M_3=$\frac{1}{3}$ rd dose in May+$\frac{1}{3}$ rd in June+$\frac{1}{3}$ rd in July, M_4=$\frac{1}{4}$th dose in May +$\frac{1}{4}$th in June+$\frac{1}{4}$th in July+$\frac{1}{4}$th in August, M_5=1/5 th dose in May+1/5th in June+1/5th in July +1/5th in August+1/5th in September.

P_2O_5 at 20 lb./ac. as Super dissolved in water and sprayed.

3. DESIGN :

(i) R B.D. (ii) (a) 6. (b) N.A. (iii) 4. (iv) (a) 1/30 ac. (b) 1/40 ac. (v) One row one each side. (vi) Yes.

4. GENERAL :

(i) Poor yield due to water logging for a month. (ii) Nil. (iii) Cane yield, no. of mature stalks and sucrose %. (iv) (a) N.A. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 9.87 tons/ac. (ii) 2.10 tons/ac. (iii) Treatment differences are highly significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	8.85	10.18	7.20	10.58	10.76	11.64

S.E /mean = 1.05 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 55(190).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'M'.**

Object :—To find out the dose and time of application of different kinds of nitrogenous fertilizers for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Pusa. (iii) 14.2.1955. (iv) (a) One disc ploughing and harrowing, one mould board ploughing. (b) Flat method. (c) 60 mds/ac. (d) 3′ between rows. (e) N.A. (v) G.M. (vi) BO—17(medium). (vii) Irrigated. (viii) 4 interculturings by 5-tyred cultivator, 4 weedings, earthing up. (ix) 57.03″. (x) 7 to 10.2.1956.

2 TREATMENTS :

All combinations of (1) and (2)+a control.

(1) 2 sources of 60 lb./ac. of N : S_1=A/S and S_2=A/S/N.

(2) 5 times of application of N : T_1=At planting, T_2=At earthing, $T_3=\frac{3}{4}$ at planting$+\frac{1}{4}$ at earthing, $T_4=\frac{1}{2}$ at planting$+\frac{1}{2}$ at earthing and $T_5=\frac{1}{4}$ at planting$+\frac{3}{4}$ at earthing.

3. DESIGN :

(i) R.B.D. (ii) (a) 11. (b) N.A. (iii) 4. (iv) (a) 1/30th/ac. (b) 1/40th/ac. (v) One row on either side. (vi) Yes.

4. GENERAL :

(i) Affected by floods. (ii) Nil. (iii) Cane yield, no. of mature stalks and sucrose%. (iv) (a) 1955—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 13.12 tons/ac. (ii) 2.33 tons/ac. (iii) None of the effects is significant. (iv) Av. yield of cane in tons/ac.

Control = 13.97 tons/ac.

	T_1	T_2	T_3	T_4	T_5	Mean
S_1	15.04	12.27	11.43	12.70	13.73	13.03
S_2	11.78	14.21	12.37	13.56	13.28	13.34
Mean	13.41	13.24	11.90	13.13	13.51	13.04

S.E. of T marginal mean = 0.81 tons/ac.
S.E. of S marginal mean = 0.52 tons/ac.
S.E. of body of table or control mean = 1.17 tons/ac.

Crop :- Sugarcane. **Ref. :- Bh. 56(102).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'M'.**

Object :—To find out the dose and time of application of different kinds of nitrogenous fertilizers to Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) Nil. (ii) (a) Light loam. (b) N A. (iii) 1.2 1956. (iv) (a) 2 ploughings by disc plough followed by beaming. (b) Flat method of planting. (c) 60 mds./ac. (d) Rows 3′ apart. (e) Nil. (v) Nil. (vi) BO—17. (vii) Irrigated. (viii) One interculturing by Bihar cultivator and one earthing up. (ix) 57.54″. (x) 11.2.1957.

2. TREATMENTS :

Same as in expt. no. 55 (190) on page 773.

3. DESIGN :

(i) R.B.D. (ii) (a) 11. (b) N.A. (iii) 4. (iv) (a) 60.5′×24′ (b) 60.5′×18. (v) 2 rows along length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) No. of mature stalks, sucrose % and sugarcane yield. (iv) (a) 1955—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 19.05 tons/ac. (ii) 2.08 tons/ac. (iii) None of the effects is significant. (iv) Av. yield cane in tons/ac.

Control = 18.62 tons/ac.

	T_1	T_2	T_3	T_4	T_5	Mean
S_1	19.10	18.07	18.73	19.65	20.38	19.19
S_2	20.39	18.55	19.10	18.37	18.55	18.99
Mean	19.75	18.31	18.92	19.01	19.47	19.09

S.E. of T marginal mean = 0.99 tons/ac.
S.E. of S marginal mean = 0.63 tons/ac.
S.E. of body of table or control mean = 1.40 tons/ac.

Crop :- Sugarcane. **Ref. :- Bh. 57(53).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'M'.**

Object :—To find out the dose and time of application of different kinds of nitrogenous fertilizers to Sugarcane.

1. BASAL CONDITIONS :

(i) (a) G.M.—Sugarcane—G.M. (b) G.M. (c) 75 lb./ac. of P_2O_5 at sowing. (ii) (a) Light loam. (b) Refer soil analysis, Pusa. (iii) 6.1.1957. (iv) (a) 2 ploughing by mould board plough followed by disc harrowing. (b) Flat method (c) 60 mds./ac. (d) Rows 3′ apart. (e) Nil. (v) 75 lb./ac. of P_2O_5 as Super. (vi) BO—17. (vii) Irrigated. (viii) Interculturing with 5-tyred Bihar cultivator. (ix) 33.22″. (x) 17.2 1958.

2. TREATMENTS :

Same as in expt no. 55 (190) on page 773.

3. DESIGN :

(i) R.B D. (ii) (a) 11. (b) N.A. (iii) 4. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) 2 rows along length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Biometric observations and cane yield. (vi) (a) 1955—contd. , (b) No. (c) Nil (v) (a) Harinagar, Narkatiaganj and Majhaulia. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 13.64 tons/ac. (ii) 1.97 tons/ac. (iii) 'Only control *vs.* others' effect is highly significant. (iv) Av. yield of cane in tons./ac.

Control = 10.62 tons/ac.

	T_1	T_2	T_3	T_4	T_5	Mean
S_1	15.39	13.59	14.22	14.69	13.59	14.30
S_2	13.74	11.50	14.69	13.92	14.07	13.58
Mean	14.57	12.55	14.46	14.31	13.83	13.94

S.E. of T marginal mean = 0.70 tons/ac.
S.E. of S marginal mean = 0.44 tons/ac.
S.E. of body of table or control mean = 0.99 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 58(24).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'M'.**

Object :—To find out the dose and time of application of different kinds of nitrogenous fertilizers to sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) Nil. (ii) (a) Light loam. (b) Refer soil analysis, Pusa. (iii) 22.1.1958. (iv) (a) One ploughing by mould board plough followed by disc harrowing. (b) Flat method. (c) 60 mds./ac. (d) 3′ apart (rows). (e) Nil. (v) G.M. after first ploughing. (vi) BO—17. (vii) Irrigated. (viii) 5 interculturings with 5-tyred Bihar cultivator and earthing up. (ix) 46.88″. (x) 3.2.1959.

2. TREATMENTS. and 3 DESIGN :

Same as in expt no. 55(190) on page 773.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Biometric observations and cane yield. (iv) (a) 1955—N.A. (b) and (c) No. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 12.90 tons/ac. (ii) 2.65 tons/ac. (iii) None of the effects is significant. (iv) Av. yield of cane in tons/ac.

Control = 10.73 tons/ac.

	T_1	T_2	T_3	T_4	T_5	Mean
S_1	13.44	11.94	12.49	15.13	12.49	13.10
S_2	14.55	12.16	13.77	13.22	12.01	13.14
Mean	14.00	12.05	13.13	14.18	12.25	13.12

S.E. of T marginal mean = 0.94 tons/ac.
S.E. of S marginal mean = 0.59 tons/ac.
S.E. of body of table or control mean = 1.33 tons/ac.

Crop :- Sugarcane. **Ref. :- Bh. 55(189).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'M'.**

Object :—To study the effect of P and different sources of N on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) Nil. (ii) (a) Clay loam. (b) Refer soil analysis, Pusa. (iii) 1, 2.2.1955. (iv) (a) One disc ploughing, disc harrowing, one mould board ploughing. (b) Flat method. (c) 50 mds./ac. (d) Rows 3′ apart. (e) Nil. (v) Nil. (vi) BO—11 (medium). (vii) Irrigated. (viii) 4 interculturings with 5-tyerd Bihar cultivator and weedings, earthing up in the last week of June. (ix) 53.03″. (x) 15 to 19.12.1955.

2. TREATMENTS :

All combinations of (1) and (2)+a control (no manure)

(1) 2 sources of N : S_1=Compost and S_2=A/S.
(2) 5 levels of manures : L_1=40 lb./ac. of N+50 lb./ac. of P_2O_5 as Super, L_2=2 times of L_1, L_3= 3 times of L_1, L_4=4 times of L_1 and L_5=5 times of L_1.

3. DESIGN :

(i) R.B.D. (ii) (a) 11. (b) N.A. (iii) 5. (iv) (a) 1/30 ac. (b) 1/40 ac. (v) One row on each side. (vi) Yes.

4. GENERAL :

(i) Affected by floods. (ii) Nil. (iii) No. of mature stalks, tillers and yield of cane. (iv) (a) and (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 12.74 tons/ac. (ii) 1.78 tons/ac. (iii) Main effect of L and 'control *vs.* others' are highly significant. Other effects are not significant. (iv) Av. yield of cane in tons/ac.

Control = 10.09 tons/ac.

	L_1	L_2	L_3	L_4	L_5	Mean
S_1	11.30	11.89	14.57	12.40	13.72	12.78
S_2	12.18	11.71	15.82	13.39	12.99	13.22
Mean	11.74	11.80	15.20	12.90	13.31	13.00

S.E. of L marginal mean = 0.62 tons/ac.
S.E. of S marginal mean = 0.36 tons/ac.
S.E. of body of table or control mean = 0 89 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 55(192).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- M'.**

Object : – To find out the effect of deep placement of Super on the availability of phosphate in calcareous soil and sugarcane yield.

1. BASAL CONDITION :

(i) (a) Nil. (b) *Sanai.* (c) Nil. (ii) (a) Clay loam. (b) Refer soil analysis, Pusa. (iii) 30, 31.1.1955. (iv) (a) One disc ploughing, disc harrowing, one mould board plough. (b) Flat method. (c) 60 mds./ac. (d) 3' between rows. (e) Nil. (v) G.M. applied. (vi) BO—11 (medium). (vii) Irrigated. (viii) 5 interculturings by 5-tyred cultivators, 5 weedings, earthing up in the last week of June. (ix) 57.03". (x) 9, to 12.12.1955.

2 TREATMENTS :

9 manurial treatments : M_0=Control, M_1=75 lb./ac. of P_2O_5 as Super, M_2=125 lb /ac. of P_2O_5 as Super, M_3=75 lb./ac. of P_2O_5 as Super at 8" depth, M_4=125 lb./ac. of P_2O_5 as Super, at 8" depth, M_5=75 lb./ac. of P_2O_5 Super at 8" depth+300 lb./ac. of A/S at 8" depth, M_6=125 lb./ac. of P_2O_5 as Super at 8" depth+500 lb./ac. of A/S at 8" depth, M_7=75 lb./ac. of P_2O_5 as Super at 4" depth+300 lb./ac. of A/S at 4" depth and M_8=125 lb /ac. of P_2O_5 as Super at 4" depth+500 lb./ac. of A/S at 4" depth.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 1/30 ac. (b) 1/40 ac. (v) One row on either side. (vi) Yes.

4. GENERAL :

(i) Affected by floods. (ii) Borer incidence in monsoon—Endrine was sprayed. (iii) Biometric observations and cane yield. (iv) (a) and (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 11.79 tons/ac. (ii) 2.77 tons/ac. (iii) Treatment differences are significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8
Av. yield	9.80	9.18	10.61	11.45	10.94	10.35	15.63	12.73	15.41

S.E./mean = 1.38 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 55(191).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'M'.**

Object :—To study the effect of different leguminous crops manured with P_2O_5 on the yield of Sugarcane crop.

1. BASAL CONDITIONS

(i) (a) Nil. (b) and (c) As per treatments. (ii) (a) Light loam. (b) Refer soil analysis, Pusa. (iii) 24.1.1955. (iv) (a) One disc ploughing, disc harrowing, one mould board ploughing. (b) Flat method. (c) 60 mds./ac. (d) Rows 3′ apart. (e) Nil. (v) 30 lb./ac. of A/S at the time of planting cane. (vi) BO—17 (medium). (vii) Irrigated. (viii) 4 interculturings with 5-tyred cultivators, weedings, earthing up in mid June with the application of 30 lb./ac. of A/S as top dressing. (ix) 57.03″. (x) 28.3.1956.

2. TREATMENTS:

1. Control (no manure).
2. *Sanai* for G.M.+50 lb /ac. of Super to cane at planting.
3. *Sanai* for G.M.+50 lb./ac. of Super to *Sanai* at sowing.
4. *Moong* for G.M. +50 lb./ac. of Super to cane at planting.
5. *Moong* for G.M. +50 lb./ac. of Super to *Moong* at sowing.

3. DESIGN:

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) 1/30 ac. (b) 1/40 ac. (v) One row on either side. (vi) Yes.

4. GENERAL:

(i) Water logging in the later part of growth period. (ii) Nil. (iii) Cane yield, no. of mature stalks and sucrose %. (iv) (a) 1955—N.A. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS:

(i) 14.28 tons/ac. (ii) 1.59 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	1	2	3	4	5
Av. yield	13.96	14.77	13.54	14.17	14.9

S.E./mean = 0.65 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 56(100).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'M'.**

Object:—To find out the efficacy of Dicalcium phosphate in comparison with Super on the yield of Sugarcane.

1. BASAL CONDITIONS:

(i) (a) Nil. (b) *Sanai.* (c) Nil. (ii) (a) Heavy loam. (b) Refer soil analysis, Pusa. (iii) 13.2.1956. (iv) (a) One ploughing mould board followed by disc harrowing. (b) Flat method. (c) 50 mds /ac. (d) Rows 3′ apart. (e) Nil. (v) Nil. (vi) BO—28. (vii) Irrigated. (viii) 5 interculturings with 5-tyred Bihar cultivator and earthing up in the last week of June. (ix) 57.34″. (x) Replications 1 and 2 on 8.3.1957 and replications 3 and 4 on 23.3 57.

2. TREATMENTS:

All combinations of (1) and (2) + a control (no manure).

(1) 2 sources : S_1=Super, S_2=Dical. Phos.

(2) 3 levels of sources : L_1=60 lb./ac. of A/S, L_2=60 lb./ac. of castorcake and L_3=60 lb./ac. of castorcake+30 lb./ac. of A/S.

3. DESIGN:

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) 1/30 ac. (b) 1/40 ac. (v) One row on either side. (vi) Yes.

4. GENERAL:

(i) Poor due to continued water logging for a month. (ii) Nil. (iii) Yield, no. of mature stalks and Sucrose%. (iv) (a) to (c) No. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS:

(i) 5.72 tons/ac. (ii) 1.24 tons/ac. (iii) None of the effects is significant. (iv) Av. yield of cane in tons/ac.

Control = 5.58 tons/ac.

	L_1	L_2	L_3	Mean
S_1	6.10	6.28	4.96	5.78
S_2	5.07	5.95	6.10	5.71
Mean	5.59	6.12	5.53	5.75

S.E. of L marginal mean = 0.44 tons/ac.
S.E. of S marginal mean = 0.36 tons/ac.
S.E. of body of table or control mean = 0.62 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 57(51).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'M'.**

Object :—To find out the efficiency of Dical. phos. in comparison with Super on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) *Sanai*—Sugarcane—*Sanai*. (b) *Sanai*. (c) Nil. (ii) (a) Clay. (b) Refer soil analysis, Pusa. (iii) 27 2.1957. (iv) (a) Once ploughed by mould board plough followed by disc harrowing. (b) Flat planting. (c) 50 mds./ac, (d) Rows 3′ apart. (e) Nil. (v) Nil. (vi) BO—28. (vii) N.A. (viii) One interculturing with 5-tyred Bihar cultivator. (ix) 30.27″. (x) 8.3.1858.

2. TREATMENTS :

Same as in expt. no. 56(100) on page 778.

3. DESIGN :

(i) R.B D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) 2 rows along length. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) No major incidence of pest. (iii) No. of mature stalks, sucrose % and sugarcane yield. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) (a) None. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 6.71 tons/ac. (ii) 2.11 tons/ac. (iii) Interaction S×L and 'control *vs.* other' effects are significant. Others effects are not significant. (iv) Av. yield of cane in tons/ac.

Control = 4.04 tons/ac.

	L_1	L_2	L_3	Mean
S_1	10.51	5.69	6.94	7.17
S_2	5.95	5.88	8.01	6.61
Mean	8.23	5.79	.48	7.16

S.E. of L marginal mean = 0.75 tons/ac.
S.E. of S marginal mean = 0.61 tons/ac.
S.E. of body of table or control mean = 1.06 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 58(55).**

Site :- Sugarcane Res. Sub-Stn., Sepaya. **Type :- 'M'.**

Object :— To study the effect of A/S and compost on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) 50 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy loam to clayey with alkaline patches. (b) N.A. (iii) 31.1.1958 to 2.2.1958. (iv) 4 ploughings by *desi* plough. (b) Flat planting. (c) 60 mds./ac. (d) Rows 3′ apart. (e) Nil. (v) *Sanai* G.M. (vi) BO—17. (vii) Irrigated. (viii) One weeding, earthing and interculturing. (ix) 51.63″. (x) 8 to 12.2.1958.

2. TREATMENTS :

4 manurial treatments : M_0=Control, M_1=60 lb./ac. of N as compost, M_2=30 lb./ac. of N as compost+30 lb./ac. of N as A/S and M_3=60 lb./ac. of N as A/S.

75 lb./ac. of P_2O_5 as super.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 60.5′ × 24′. (b) 60.5′ × 18′. (v) One row on either side along length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Incidence of stem-borers—control measures N.A. (iii) Biometric observations and cane yield. (iv) (a) 1958—1959. (b) No. (c) Nil. (v) (a) Harinagar, Pachrukhi, Narkatiaganj, Motipur, Motihari and Jineshwargarh. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 19.82 tons/ac. (ii) 1.41 tons/ac. (iii) Treatment differences are significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3
Av. yield	18.29	20.68	20.53	19.76

S.E./mean = 0.56 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 59(29).**

Site :- Sugarcane Res. Sub-Stn., Sepaya. **Type :- 'M'.**

Object :— To study the effect of A/S and compost on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) 50 lb./ac. of P_2O_5 as Super. (ii) Sandy loam to clayey with alkali patches. (b) N.A. (iii) 27.2.1959. (iv) (a) 4 ploughings by *desi* plough. (b) Flat planting, (c) 60 mds./ac. (d) Rows 3′ apart. (e) Nil. (v) *Sanai* buried 3 weeks before planting. (vi) BO—17. (vii) Irrigated. (viii) One weeding and one eartning (ix) 46.03″. (x) 5, 6.2.1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(55) above.

5. RESULTS :

(i) 23.24 tons/ac. (ii) 2.42 tons/ac. (iii) Treatment differences are highly significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3
Av. yield	20.68	21.45	25.46	25.38

S.E./mean = 0.99 tons/ac.

Crop :-Sugarcane. **Ref.:- Bh. 56(135).**

Site :-Sugarcane Res. Sub-Stn., Sepaya. **Type :- 'M'.**

Object :—To find out the efficiency of Dical. phos. in comparison with Super on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) 50 lb./ac. qf P_2O_5 as super. (ii) (a) Sandy loam to clayey with alkaline patches. (b) N.A. (iii) 17 to 19.3.1956. (iv) (a) 4 ploughings by *desi* plough. (b) Flat planting. (c) 60 mds /ac. (d) Rows 3′ apart. (e) Nil. (v) *Sanai* buried at site. (vi) BO—17. (vii) Unirrigated. (viii) Weeding, hoeing and earthing. (ix) 53.96″. (x) 7, 8.3.1957.

2. TREATMENTS :

All combinations of (1) and (2)+control

(1) 3 sources of N to give 60 lb./ac. : S_1=A/S, S_2=Castorcake and S_3=A/S+castorcake in 1 : 1 ratio.

(2) 2 sources of P_2O_5 to give 75 lb./ac. T_1=Super and T_2=Dical. Phos.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 4. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) One row on either side. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) No. of tillers and mature stalks, sucrose % and cane yield. (iv) (a) 1955—N.A. (b) No. (c) Nil. (v) (a) Motihari and Motipur. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 17.23 tons/ac. (ii) 1.69 tons/ac. (iii) Main effect of S alone is significant. (iv) Av. yield of cane in tons/ac.

Control = 17.34 tons/ac.

	S_1	S_2	S_3	Mean
T_1	16.81	16.02	17.84	16.89
T_2	14.87	17.62	20.14	17.54
Mean	15.84	16.82	18.99	17.22

S.E. of S marginal mean = 0.60 tons/ac.
S.E. of T marginal mean = 0.49 tons/ac.
S.E. of body of table or control mean = 0.85 tons/ac.

Crop :- Sugarcane. **Ref. :- Bh. 58(57)**

Site :- Sugarcane Res. Sub-Stn., Sepaya. **Type :- 'M'.**

Object :—To find out the optimum dose and time of application of different kinds of nitrogenous fertilizers for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) 50 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy loam to clayey with alkaline patches. (b) N.A. (iii) 27 to 30.1.1958. (iv) (a) 4 ploughings by *desi* plough. (b) Flat planting. (c) 60 mds/ac. (d) Rows 3′ apart. (c) Nil. (v) *Sanai* buried 3 weeks before planting and B.D. of 75 lb./ac. of P_2O_5 as Super at planting. (vi) BO 17. (vii) Irrigated. (viii) Weeding, interculturing and earthing each once. (ix) 51.63″. (x) 17 to 19.3.1959.

2. TREATMENTS:

All combinations of (1) and (2)+control.

(1) 2 sources of N to given 60 lb./ac. : S_1=A/S and S_2=A/S/N.

(2) 5 times of application of N : T_1=at planting, $T_2=\frac{3}{4}$ at planting,+$\frac{1}{4}$ at earthing, $T_3=\frac{1}{2}$ at planting+$\frac{1}{2}$ at earthing, $T_4=\frac{1}{4}$ at planting+$\frac{3}{4}$ at earthing and T_5= at earthing.

3. DESIGN :

(i) R.B.D. (ii) (a) 11. (b) N.A. (iii) 4. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) One row on either side along length. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Biometric observations and cane yield. (iv) (a) 1958—1959. (b) No. (c) Nil. (v) (a) All zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 19.42 tons/ac. (ii) 3.41 tons/ac. (iii) No effect is significant. (iv) Av. yield of cane in tons/ac.

Control = 17.12 tons/ac.

	T_1	T_2	T_3	T_4	T_5	Mean
S_1	20.02	17.04	21.05	19.03	19.87	19.40
S_2	20.64	21.08	20.72	17.63	19.47	19.91
Mean	20.33	19.06	20.89	18.33	19.67	19.66

S.E. of S marginal mean = 0.77 tons/ac.
S.E. of T marginal mean = 1.21 tons/ac.
S.E. of body of table or control mean = 1.71 tons/ac.

Crop :- Sugarcane. **Ref. :- Bh. 59(31).**

Site :- Sugarcane Res. Sub-Stn., Sepaya. **Type :- 'M'.**

Object :—To find the optimum dose and time of application of different kinds of nitrogenous fertilizers for Sugarcane.

1. BASAL CONDITIONS

(i) (a) Nil. (b) *Sanai.* (c) 50 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy loam to clayey with alkaline patches. (b) N.A. (iii) 4.3.1959. (iv) (a) 4 ploughings by *desi* plough. (b) Flat planting. (c) 60 mds./ac. (d) Rows 3′ apart. (e) N.A. (v) *Sanai* buried 3 weeks before transplanting and 75 lb./ac. P_2O_5 as Super. (vi) BO—17. (vii) Irrigated (viii) Weeding, interculturing and earthing each once. (ix) 46.03″. (x) 10.2.1960 to 12.2.1960.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 58(57) on page 781.

4. GENERAL :

(i) Good. (ii) Attack of sugarcane borer—no control measures were taken. (iii) No. of tillers and mature stalks, cane yield and sucrose %. (iv) (a) 1958—1959. (b) No. (c) Nil. (v) (a) Motipur, Narkatiaganj Motihari, Harinagar, Majhaulia Warisaliganj and Jineshwargarh. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 21.33 tons/ac. (ii) 2.81 tons/ac. (ii) 'Control *vs.* rest' effect is highly significant. No other effect is significant. (iv) Av. yield of cane in tons./ac.

Control = 16.60 tons/ac.

	T_1	T_2	T_3	T_4	T_5	Mean
S_1	21.45	20.79	20.97	20.17	22.63	21.20
S_2	24.46	23.07	21.12	22.88	20.53	22.41
Mean	22.96	21.93	21.05	21.53	21.58	21.81

S.E. of S marginal mean = 0.63 tons/ac.
S.E. of T marginal mean = 1.99 tons/ac.
S.E. of body of table or control mean = 1.40 tons/ac.

Crop :- Sugarcane. **Ref. :- Bh. 57(243).**

Site :- Sugarcane Res. Sub-Stn., Sepaya. **Type :- 'M'.**

Object :—To find out the effect of different sources and levels of N with P on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) Nil. (b) N.A. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) N.A. (iv) (a) 4 ploughings. (b) Flat method. (c) 60 mds./ac. (d) Row to row 3′. (e) Nil. (v) Nil. (vi) BO—17. (vii) Irrigated. (viii) 1 weeding, interculturing and earthing up. (ix) and (x) N.A.

2. TREATMENTS :

All combinations of (1) and (2)+a control
(1) 2 levels of N and P_2O_5 : L_1=60 lb./ac. of N+75 lb./ac. of P_2O_5 as Super, and L_2=120 lb./ac. of N+150 lb./ac. of P_2O_5 as Super.
(2) 4 sources of N : S_1=A/S, S_2=A/S/N, S_3=G.N.C. and S_4=Castorcake.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) One row on either side along the length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Cane yield. (iv) (a) 1957—1959. (b) No. (c) Nil. (v) (a) Jineshwargarh. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 16.19 tons/ac. (ii) 2.80 tons/ac. (iii) 'Control *vs.* rest' effect is significant and the main effect of S is highly significant. Other effects are not significant. (vi) Av. yield of cane in tons/ac.

	S_1	S_2	S_3	S_4	Mean
L_1	16.49	13.52	18.15	17.70	16.47
L_2	12.16	16.68	20.68	17.52	16.76
Mean	14.33	15.10	19.42	17.61	16.67

S.E. of L marginal mean = 0.70 tons/ac.
S.E. of S marginal mean = 0.99 tons/ac.
S.E. body of table or control mean = 1.40 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 58(58).**

Site :- Sugarcane Res. Sub-Stn., Sepaya. **Type :- 'M'.**

Object :— To study the effect of different sources and levels of N with P on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) 50 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy loam to clayey with alkaline patches. (b) N.A. (iii) 3 to 5.2.1958. (iv) (a) 4 ploughings by *desi* plough. (b) Flat planting. (c) 60 mds./ac. (d) Rows 3′ apart. (e) Nil. (v) G.M. buried in June. (vi) BO—14. (vii) Irrigated. (viii) One weeding, interculturing and earthing. (ix) 51.63″. (x) 15 to 17.3.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 57(243) on page 783.

4. GENERAL :

(i) Good. (ii) Stem borers and termite attack—control measures N.A. (iii) No. of tillers and mature stalks, sucrose % and cane yield. (iv) (a) 1957—1959. (b) No. (c) Nil. (v) (a) Harinagar, Pachrukhi, Narkatiaganj, Warisaliganj and Motipur. (b) Nil. (vi) and (vii) Nil.

5. RESULTS

(i) 19.17 tons/ac. (ii) 2.51 tons/ac. (iii) 'Control *vs.* rest' effect is highly significant. Other effects are not significant. (iv) Av. yield of cane in tons/ac.

Control = 14.68 tons/ac.

	S_1	S_2	S_3	S_4	Mean
L_1	20.01	17.64	19.14	18.64	18.86
L_2	19.71	21.54	20.27	20.84	20.59
Mean	19.86	19.59	19.70	19.74	19.72

S.E. of L marginal mean = 0.63 tons/ac.
S.E. of S marginal mean = 0.89 tons/ac.
S.E. of body of table or control mean = 1.25 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 59(30).**

Site :- Sugarcane Res. Sub-Stn., Sepaya. **Type :- 'M'.**

Object :— To find out the effect of different sources and levels of N on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) 50 lb./ac. of P_2O_5 as super. (ii) (a) Sandy loam to clayey with alkaline patches. (b) N.A. (iii) 27.2.1959. (iv) (a) 4 ploughings by *desi* plough. (b) Flat planting. (c) 60 mds./ac. (d) Rows 3′ apart. (e) Nil. (v) G.M. buried 3 weeks before planting. (vi) BO—14 (medium). (vii) Irrigated. (viii) Weeding, interculturing and earthing each once. (ix) 46.03″. (x) 5, 6.2.1960.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 57(243) on page 783.

4. GENERAL :

(i) Good. (ii) Attack of borers. No control measures taken. (iii) No. of tillers and mature stalks, cane yield and sucrose %. (iv) (a) 1957—1959. (b) No. (c) Nil. (v) Harinagar, Pachrukhi, Narkatiaganj, Warisaliganj, Motipur, Motihari, Jineshwargarh and Majhaulia. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 27.54 tons/ac. (ii) 3.85 tons/ac. (iii) 'Control *vs.* rest' effect is significant. Other effects are not significant. (iv) Av. yield of cane in tons/ac.

Control = 21.56 tons/ac.

	S_1	S_2	S_3	S_4	Mean
L_1	29.09	28.10	27.22	30.78	28.80
L_2	25.86	27.18	27.07	31.00	27.78
Mean	27.48	27.64	27.15	30.89	28.29

S.E. of L marginal mean = 0.96 tons/ac.
S.E. of S marginal mean = 1.36 tons/ac.
S.E. of body of table or control mean = 1.92 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 57(85).**

Site :- Zonal Centre, Warisaliganj. **Type :- 'M'.**

Object :—To find out the dose and time of application of different kinds of nitrogenous fertilizers for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai*. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 13, 14.2.1957. (iv) (a) G.M. buried by one tractor ploughing, 2 ploughings by *desi* plough. (b) Flat planting. (c) 60 mds/ac. (d) Rows 3′ apart. (e) Nil. (v) G.M. (*sanai*) ploughed. (vi) BO—17 (medium). (vii) Irrigated. (viii) 5 interculturing operations with 5-tyred cultivator. (ix) 29.51″. (x) 1, 2.3.1958.

2. TREATMENTS :

All combinations of (1) and (2) + a control.
(1) 2 sources of N at 80 lb./ac. : S_1=A/S and S_2=A/S/N.
(2) 5 times of application of N : T_1=at planting, $T_2=\frac{3}{4}$ at planting,$+\frac{1}{4}$ at earthing, $T_3=\frac{1}{2}$ at planting$+\frac{1}{2}$ at earthing, $T_4=\frac{1}{4}$ at planting$+\frac{3}{4}$ at earthing and T_5=at earthing.

3. DESIGN :

(i) R.B.D. (ii) (a) 11. (b) N.A. (iii) 3. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) One row on either side along length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Incidence of white fly and Pyrilla—Endrine sprayed. (iii) No. of tillers, mature stalks, sucrose% and cane yield. (iv) (a) 1957—1958. (b) No. (c) Nil. (v) (a) Harinagar and Narkatiaganj. (b) Nil. (vi) and (viii) N.A.

5. RESULTS

(i) 30.47 tons/ac. (ii) 2.42 tons/ac. (iii) No effect is significant. (iv) Av. yield of cane in tons/ac.

Control = 31.37 tons/ac.

	T_1	T_2	T_3	T_4	T_5	Mean
S_1	29.64	27.95	31.44	29.64	29.57	29.65
S_2	31.81	32.73	31.41	28.03	31.55	31.11
Mean	30.73	30.34	31.43	28.84	30.56	30.38

S.E. of S marginal mean = 0.62 tons/ac.
S.E. of T marginal mean = 0.99 tons/ac.
S.E. of the body of table N or control mean = 1.40 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 58(61).**

Site :- Zonal Centre, Warisaliganj. **Type :- 'M'.**

Object :—To find out the dose and time of application of different kinds of nitrogenous fertilizers for sugarcane.

1. BASAL CONDITIONS :

(i) *Sanai*—Sugarcane—*Sanai*. (b) *Sanai*. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 12. to 17.3.58. (iv) (a) 4 ploughings by *desi* plough (b) Flat planting. (c) 60 mds/ac. (d) Rows 3′ apart. (e) Nil. (v) 200 mds./ac. of pressmud applied before G.M. 60 lb./ac. of P_2O_5 as Super at the time of planting. (vi) BO—17(medium). (vii) Irrigated. (viii) 5 interculturings. (ix) 30.90″. (x) 4 to 29.3.1959.

2. TREATMENTS :

Same as in expt. no. 57(85) on page 785.

3. DESIGN :

(i) R.B.D. (ii) (a) 11. (b) N.A. (iii) 4. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) One row on either side along length. (vi) Yes.

4. GENERAL :

(i) Good lodged. (ii) Pyrilla attack—control measures taken by plant protection deptt. (iii) No. of tillers and mature stalks, sucrose %, and cane yield. (iv) (a) 1957—1958. (b) No. (c) Nil. (v) (a) Harinagar and Narkatiaganj. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 19.32 tons/ac. (ii) 2.18 tons/ac. (iii) No effect is significant. (iv) Av. yield of cane in tons/ac.

Control = 18.92 tons/ac.

	T_1	T_2	T_3	T_4	T_5	Mean
S_1	17.52	20.83	17.19	19.10	20.57	19.04
S_2	20.75	19.58	18.81	17.82	21.38	19.67
Mean	19.13	20.20	18.00	18.46	20.97	19.35

S.E. of S marginal mean = 0.49 tons/ac.
S.E. of T marginal mean = 0.77 tons/ac.
S.E. of body of table or control mean = 1.09 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 54(29).**
Site :- Zonal Centre, Warisaliganj. **Type :- 'M'.**

Object :—To compare the effects of A/N and A/S at different levels of N on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—*Sanai*—Sugarcane. (b) *Sanai.* (c) Nil. (ii) (a) Sandy loam with scattered alkali patches. (b) N.A. (iii) 9, 10.3.1954. (iv) (a) 4 ploughings with tractor cultivator. (b) Planted in rows. (c) 13500 3-budded setts/ac. (d) Row to row distance 3′, (e) Nil. (v) G.M. with *sanai.* (vi) CO–419—(late). (vii) Irrigated. (viii) Weeding and earthing. (ix) 22.56″. (x) N.A.

2. TREATMENTS :

All combinations of (1) and (2)+control.
(1) 2 sources of N : S_1=A/N and S_2=A/S.
(2) 3 levels of N : L_1=40, L_2=80 and L_3=120 lb./ac.
Fertilizers were applied in furrows at planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) 60.5′×168′. (iii) 4. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) One row on either side along length. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Biometric observations and cane yield. (iv) (a) 1954—N.A. (b) No. (c) Nil. (v) (a) Other zonal Centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 28.38 tons/ac. (ii) 5.50 tons/ac. (iii) No effect is significant. (iv) Av. yield of cane in tons/ac.

Control = 29.34 tons/ac.

	L_1	L_2	L_3	Mean
S_1	28.49	25.90	31.15	28.51
S_2	30.90	27.35	25.53	27.93
Mean	29.70	26.62	28.34	28.22

S.E. of S marginal mean = 1.59 tons/ac.
S.E. of L marginal mean = 1.94 tons/ac.
S.E. of body of table or control mean = 2.75 tons /ac.

Crop :- Sugarcane. **Ref :- Bh. 57(83).**

Site :- Zonal Centre, Warisaliganj. **Type :- 'M'.**

Object :—To study the effect of different sources of N at different levels of N and P on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) G.M.—Sugarcane—Fallow. (b) *Sanai.* (c) Nil. (ii) (a) Sandy loam with alkali patches. (b) N.A. (iii) 10, 11.2.1957. (iv) (a) Burying of G.M., followed by one tractor plough and 3 *desi* ploughs. (b) Flat planting. (c) 60 three-budded Setts/row. (d) Rows 3′ apart. (e) Nil. (v) G.M. buried 3 weeks before planting. (vi) BO—14(medium). (vii) Irrigated. (viii) 5 interculturings with 5-tyred cultivator. (ix) 28.9″. (x) 25.1.1958 to 2.2.1958.

2. TREATMENTS

All combinations of (1) and (2)+control.

(1) 4 sources of N : S_1=A/S, S_2=A/S/N, S_3=G.N.C and S_4=Castorcake.

(2) 2 levels of N and P_2O_5 : L_1=80 lb./ac. of N+60 lb./ac. of P_2O_5 as Super, and L_2=160 lb./ac. of N+120 lb./ac. of P_2O_5 as super.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) One row on either side along length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Incidence of Pyrilla and white fly—controlled by spray of Endrine. (iii) Biometric observations and cane yield. (iv) (a) 1957—1958. (b) No. (c) Nil. (v) (a) Harinagar and Narkatiaganj. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 27.77 tons/ac. (ii) 4.70 tons/ac. (iii) No effect is significant. (iv) Av. yield of cane in tons/ac.

Control = 25.60 tons/ac.

	S_1	S_2	S_3	S_4	Mean
I_1	28.58	29.57	27.14	24.79	27.52
L_2	27.29	27.81	28.83	30.34	28.57
Mean	27.93	28.69	27·98	27.56	28.04

S.E. of L marginal mean = 1.18 tons/ac.
S.E. of S marginal mean = 1.36 tons/ac.
S.E. of body of table or control mean = 2.35 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 58(59).**

Site :- Zonal Centre, Warisaliganj. **Type :- 'M'.**

Object :—To study the effect of different sources of N at different levels of N and P on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 22 to 24.2.1958. (iv) (a) 3 ploughings by *desi* plough (b) Flat planting. (c) 60 mds./ac. (d) Rows 3′ apart. (e) Nil. (v) 200 md./ac. of pressmud applied before burying *sanai.* (vi) BO—14 (medium). (vii) Irrigated. (viii) 5 interculturings. (ix) 30.90″. (x) 25.2.1959 to 20.3.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 57(83) on page 787.

4. GENERAL :

(i) Partial lodging in September. (ii) Attack of pyrilla—control measures taken by Plant Protection Officer. (iii) No. of tillers and mature stalks, sucrose % and cane yield. (iv) (a) 1957—1958. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 26.93 tons/ac. (ii) 2.53 tons/ac. (iii) No effect is significant. (iv) Av. yield of cane in tons/ac.

Control = 26.08 tons/ac.

	S_1	S_2	S_3	S_4	Mean
L_1	29.92	28.36	29.24	27.22	28.68
L_2	24.83	23.32	26.48	26.96	25.40
Mean	27.37	25.84	27.86	27.09	27.04

S.E. of L marginal means = 0.63 tons/ac.
S.E. of S marginal means = 0.89 tons/ac.
S.E. of body of the table or control mean = 1.26 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 58(60).**

Site :- Zonal Centre, Warisaliganj. **Type :- 'M'.**

Object—To study the effect of different sourees of N at different levels of N and P on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) N.A. (ii) (a) Sandy loam with alkali patches. (b) N.A. (iii) 8 to 10.11.1958. (iv) (a) 3 ploughings by *desi* plough. (b) Flat planting. (c) 60 mds./ac. (d) Rows 3′ apart. (e) Nil. (v) About 200 mds./ac. of pressmud applied before burying G.M. (vi) BO—14. (medium). (vii) Irrigated. (viii) 5 interculturings. (ix) 44.00″. (x) 18 to 26.3.1960.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 57(83) on page 787.

4. GENERAL :

(i) Good, lodged on 3.10.1959. (ii) Attack of Pyrilla—no control measures taken. (iii) No. of tillers and mature stalks, sucrose % and sugarcane yield. (iv) 1957—N.A. (b) No. (c) Nil. (v) (a) Harinagar, Majhaulia, Motipur, Jineshwargarh and Narkatiaganj. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 21.12 tons/ac. (ii) 2.82 tons/ac. (iii) Main effect of S alone is highly significant. (iv) Av. yield of cane in tons/ac.

Control = 20.39 tons/ac.

	S_1	S_2	S_3	S_4	Mean
L_1	18.04	20.53	22.88	20.50	20.49
L_2	19.54	21.64	26.70	19.84	21.93
Mean	18.79	21.08	24.79	20.17	21.21

S.E. of S marginal mean = 1.00 tons/ac.
S.E. of L marginal mean = 0.70 tons/ac.
S.E. of body of table or control mean = 1.41 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 54(15).**
Site :- Zonal Centre, Warisaliganj. **Type :- 'M'.**

Object :—To compare the effect of pressmud with standard manure on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—*Sanai*—Sugarcane. (b) *Sanai.* (c) Nil. (ii) (a) Sandy loam with scattered alkali patches. (b) N.A. (iii) 18 to 21.3.1954. (iv) (a) 4 ploughings with tractor cultivator followed by *hinga.* (b) Planted in lines (c) 60 three-budded setts/row. (d) Rows 3′ apart. (e) —. (v) G. M. with *Sanai.* (vi) CO—419 (late). (vii) Irrigated. (viii) Weeding and earthing. (ix) 22.56″. (x) N.A.

2. TREATMENTS :

4 manurial treatments : M_0=Control, M_1=60 lb./ac. of N as A/S+75 lb./ac. of P_2O_5 as Super, M_2=100 mds/ac. of pressmud and M_3=200 mds/ac. of pressmud.

Manures applied in furrows at planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) 60.5′×96′. (iii) 4. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) One row on either side along length. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Biometric observations and cane yield. (iv) (a) 1954—1956. (b) No. (c) Nil. (v) (a) All other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 28.86 tons/ac. (ii) 3.50 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3
Av. yield	27.78	31.38	29.68	26.58

S.E./mean = 1.75 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 55(136).**
Site :- Zonal Centre, Warisaliganj. **Type :- 'M'.**

Object :—To compare the effect of pressmud and molasses with standard manure on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—*Sanai*—Sugarcane. (b) *Sanai.* (c) Nil. (ii) (a) Sandy loam with scattered alkaline patches. (b) N.A. (iii) 2, 3.4.1955. (iv) (a) 4 ploughings with tractor cultivator followed by *hinga.* (b) Planted in furrows. (c) 60 three-budded setts/row. (d) Rows 3′ apart. (e) —. (v) G. M. with *Sanai.* (vi) CO—419 (late). (vii) Irrigated. (viii) Weeding twice and earthing once. (ix) 62.38″. (x) 8 to 15.3.1956.

2. TREATMENTS :

6 manurial treatments : M_0=Control, M_1=60 lb./ac. of N as A/S+75 lb./ac. of P_2O_5 as Super, M_2=60 lb./ac. of N as molasses+75 lb./ac. of P_2O_5 as Super, M_3=120 lb./ac. of N as molasses+150 lb./ac. of P_2O_5 as Super, M_4=60 lb./ac. of N as pressmud+75 lb./ac. of P_2O_5 as Super and M_5=120 lb./ac. of N as pressmud+150 lb./ac. of P_2O_5 as Super.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) 60.5′×144′. (iii) 4. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) One row on either side along length. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Biometric observations and cane yield. (iv) (a) 1954—1956. (b) No. (c) Nil. (v) (a) All zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 42.80 tons/ac. (ii) 4.28 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	40.04	40.96	42.06	46.70	43.90	43.16

S.E./mean = 2.14 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 56(4).**

Crop :- Zonal Centre, Warisaliganj. **Type :- 'M'.**

Object :—To compare the effect of pressmud and molasses with standard manure on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—*Sanai*—Sugarcane. (b) *Sanai*. (c) Nil. (ii) (a) Sandy Loam with scattered alkaline patches. (b) N.A. (iii) 12 to 14.2.1956. (iv) (a) 4 ploughings with tractor cultivator followed by *hinga*. (b) Planted in furrows. (c) 64 three-budded setts/row. (d) Rows 3′ apart. (e) Nil. (v) G. M. with *Sanai*. (vi) CO—419(late). (vii) Irrigated. (viii) 3 weedings and earthing. (ix) 43.45″. (x) 13 to 15.1.1957.

2. TREATMENTS :

6 manurial treatments : M_0=Control, M_1=80 lb./ac. of N as A/S, M_2=100 mds./ac. of pressmud, M_3=200 mds /ac. of pressmud, M_4=100 lb./ac. of molasses, and M_5=200 lb./ac. of molasses.

Pressmud and molasses were applied by broadcast 15 days before planting. A/S and Super were applied in furrows at planting.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) 60.5′×144′. (iii) 4. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) One row on either side along length. (vi) Yes.

4. GENERAL :

(i) Satisfactory ; lodged on 25.7.1956 and 1.9.1956. (ii) Nil. (iii) Biometric observations and cane yield (iv) (a) Yes 1954—1956. (b) No. (c) Nil (a) All zonal centres. (b) Nil. (vi) Nil. (vii) Modified in 1955 and 1956.

5. RESULTS :

(i) 39.17 tons/ac. (ii) 6.14 tons/ac. (iii) Treatments differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5
Av. yield	35.17	37.37	36.69	39.40	38.75	47.66

S.E./mean = 3.07 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 54(27).**

Site :- Zonal Centre, Warisaliganj. **Type :- 'M'.**

Object :—To find out the optimum doses of N, P and K for Sugarcane crop.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—*Sanai*—Sugarcane. (b) *Sanai.* (c) Nil. (ii) (a) Sandy loam with scattered alkaline patches. (b) N.A. (iii) 22.2.1954 to 8.3.1954. (iv) (a) 4 ploughings with tractor cultivator followed by *hinga.* (b) Planted in lines (c) 60 three-budded setts/row. (d) Row to Row distance 3′. (e) Nil. (v) G.M. with *Sanai.* (vi) CO—419 (late). (vii) Irrigated. (viii) Weeding and earthing. (ix) 23.75″. (x) 22.2.1955 to 2.3.1955.

2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 3 levels of N as castorcake : $N_0=O$, $N_1=40$ and $N_2=80$ lb./ac.
(2) 3 levels of P_2O_5 as Super : $P_0=0$, $P_1=50$ and $P_2=100$ lb./ac.
(3) 3 levels of K_2O as Mur. Pot. : $K_0=0$, $K_1=80$ and $K_2=160$ lb./ac.

3. DESIGN :

(i) 3^3 partially confd. (ii) (a) 9 plots/block ; 3 blocks/replication. (b) 60.5′×216′. (iii) 4. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) One row on either side along length. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Germination count, tiller count, height measurement, mature stalk count and cane yield. (iv) (a) 1954—1956. (b) No. (b) Nil. (v) (a) All other Zonal Centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 29.43 tons/ac. (ii) 6.48 tons/ac. (iii) Main effect of N alone is highly significant. (iv) Av. yield of cane in tons/ac.

	P_0	P_1	P_2	Mean	K_0	K_1	K_2
N_0	23.84	25.13	26.34	25.10	23.89	24.68	26.73
N_1	26.40	33.14	30.61	30.05	31.88	27.31	30.96
N_2	32.63	34.49	32.34	33.15	34.53	31.53	33.39
Mean	27.62	30.92	29.76	29.43	30.10	27.84	30.36
K_0	30.05	24.78	35.47				
K_1	29.18	31.57	22.77				
K_2	23.63	36.41	31.04				

S.E. of any marginal mean = 2.16 tons/ac.
S.E. of body of any table = 3.74 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 55(99).**

Site :- Zonal Centre, Warisaliganj. **Type :- 'M'.**

Object :—To find out the optimum doses of N, P and K for Sugarcane crop.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—*Sanai*—Sugarcane. (b) *Sanai.* (c) No. (ii) (a) Sandy loam with scattered alkaline patches. (b) N.A. (iii) 1 to 6.2. 1955. (iv) (a) 4 ploughings with tractor cultivator followed by *hinga.* (b) Planting in lines (c) 60 three-budded setts/row. (d) 3′ between rows. (e) Nil. (v) G.M. with *Sanai.* (vi) CO-419 (late). (vii) Irrigated. (viii) 4 interculturings. (ix) 38.80″. (x) 13.2.1956.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 54(27) above.

5. RESULTS :

(i) 41.44 tons/ac. (ii) 8.19 tons/ac. (iii) No effect is significant. (iv) Av. yield of cane in tons/ac.

	P_0	P_1	P_2	Mean	K_0	K_1	K_2
N_0	40.28	40.96	45.12	42.12	42.43	38.57	45.36
N_1	38.57	43.34	43.71	41.87	42.30	38.69	44.62
N_2	40.83	40.96	39.18	40.32	43.41	38.75	38.80
Mean	39.89	41.75	42.67	41.44	42.71	38.67	42.93
K_0	39.98	44.45	43 70				
K_1	36.00	40.90	39.11				
K_2	43.69	39.90	45.20				

S.E. of any marginal mean = 2.73 tons/ac.
S.E. of body of table = 4.73 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 56(2).**

Site :- Zonal Centre, Warisaliganj. **Type :- 'M'.**

Object :—To find out the optimum doses of N, P and K for Sugarcane crop.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—*Sanai*—Sugarcane. (b) *Sanai.* (c) No. (ii) (a) Sandy loam with scattered alkaline patches. (b) N.A. (iii) 1, 2.3.1956. (iv) (a) 4 ploughings with tractor cultivator followed by *hinga.* (b) Planting in lines. (c) 64 three-budded setts/row. (d) Rows 3′ apart. (e) Nil. (v) G.M with *Sanai.* (vi) CO-419 (late). (vii) Irrigated. (viii) 4 interculturings, weedings and earthing. (ix) 43.45″. (x) 18.12.1956 to 8.1.1957.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(27) on page 791.

4. GENERAL :

(i) Satisfactory, lodged on 20.7.1956 and 1.9.1956. (ii) No. (iii) Biometric observations and cane yield. (iv) (a) 1954—1956. (b) No. (c) Nil. (v) (a) All other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 41.14 tons/ac. (ii) 5.37 tons/ac. (iii) Main effect of K is highly significant and P×K interaction is significant. No other effect is significant. (iv) Av. yield of cane in tons/ac.

	P_0	P_1	P_2	Mean	K_0	K_1	K_2
N_0	35.20	41.94	42.78	39.97	40.53	40.77	38.61
N_1	37.28	42.73	43.53	41.18	48.67	35.14	39.73
N_2	44.69	42.30	39.85	42.28	46.53	38.87	41.44
Mean	39.06	42.32	42.05	41.14	45.24	38.26	39.93
K_0	43.83	45.00	46.89				
K_1	33.73	44.51	36.54				
K_2	39.62	37.45	42.72				

S.E. of any marginal mean = 1.79 tons/ac.
S.E. of body of any table = 3.10 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 57(84).**

Site :- Zonal Centre, Warisaliganj. **Type :- 'M'.**

Object :—To compare the effect of compost with A/S in combination with Super on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) G.M. (c) Nil. (ii) (a) Sandy loam with alkaline patches. (b) N.A. (iii) 25.2.1957. (iv) (a) One tractor ploughing followed by 2 *desi* ploughs. (b) Flat plantings. (c) 60 mds/ac. (d) Rows 3′ apart. (e) Nil. (v) Nil. (vi) BO—17 (medium). (vii) Irrigated. (viii) 4 interculturing operations with 5-tyred cultivator. (ix) 28.4″. (x) 10 to 13.12.1957.

2. TREATMENTS :

4 manurial treatments : M_0=Control, M_1=80 lb./ac. of N as compost+60 lb./ac. of P_2O_5 as Super, M_2=40 lb./ac. of N as compost+40 lb./ac. of N as A/S+60 lb./ac. of P_2O_5 as Super and M_3=80 lb./ac. of N as A/S+60 lb./ac. of P_2O_5 as Super.

3. DESIGN :

(i) R B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) One row on either side along length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Incidence of white fly and Pyrilla ; controled by spraying Endrine. (iii) Tillers count no. of mature stalks, sucrose % and cane yield. (iv) (a) 1957—1958. (b) No. (c) Nil. (v) (a) Parsa, Harinagar, Narkatiaganj, Majhaulia, Motihari, Motipur and Pachrukhi. (b) Nil. (vi) and (vii) Nil.

5. RESULTS:

(i) 17.57 tons/ac. (ii) 7.13 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3
Av. yield	15.65	15.98	18.59	20.06

S.E./mean = 2.91 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 58(284).**

Site :- Zonal Centre, Warisaliganj. **Type :- 'M'.**

Object :—To compare the effect of compost with A/S in combination with Super on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 3, 4.11.1958. (iv) (a) 5 ploughings. (b) Flat method. (c) 60 mds/ac. (d) Row to row 3′. (e) Nil. (v) Nil. (vi) BO—17. (vii) Irrigated. (viii) 2 weedings, interculturing and earthing up. (ix) and (x) N.A.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 57(84) above.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Cane yield. (iv) (a) 1957—1958. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 25.03 tons/ac. (ii) 4.41 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3
Av. yield	25.35	25.71	25.75	23.29

S.E./mean = 1.80 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 58(SFT).**

Centre :- Champaran (c.f.). **Type :- 'M'.**

Object :—Type A—To study the response of Sugarcane to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii))Alluvial. (iii) Nil. (iv) Improved. (v) and (vi) N.A. (vii) Irrigated. (viii) to (x) N.A.

2. TREATMENTS :

o =Control (no manure).
n =60 lb./ac. of N as A/S.
p =40 lb./ac. of P_2O_5 as Super.
np =60 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super.
k =40 lb./ac. of K_2O as Mur. Pot.
nk =60 lb./ac. of N as A/S+40 lb./ac. of K_2O as Mur. Pot.
pk =40 lb./ac. of P_2O_5 as Super+40 lb./ac. of K_2O as Mur. Pot.
npk =60 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super+40 lb./ac. of K_2O as Mur. Pot.

3. DESIGN :

(i) and (ii) The district has been divided into four agriculturally homogeneous zones and one field assistant posted in each zone. The field assistant conducts the trials in one Revenue circle or thana in the zone and the circle/thana is changed once in two years within the same zone. Each field assistant is required to conduct 31 trials in a year, 8 on *kharif* cereal, 8 on *rabi* cereal, 8 on cash crops, 4 on an oilseed crop and 3 on a leguminous crop. Half the number of trials conducted are of type A and the other half of type B on crop other than the legumes. The three trials on legumes are of type C. Residual effects of phosphate application are studied on type C trials in two out of the four zones in each district every year. The above experiments are laid out in randomly located fields in randomly selected villages in each of the 4 zones at the rate of one experiment per village. (iii) (a) N.A. (b) 1/80 ac. (vi) Yes.

4, GENERAL :

(i) Normal. (ii) N.A. (iii) Sugarcane yield. (iv) (a) 1958—contd. (b) No. (c) N.A. (v) As per design. (vi) and (vii) Nil.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in tons/ac.	6.56	3.26	1.86	0.411	0.72	0.85	0.47	0.74	0.354

Control yield = 11.13 tons/ac. and no. of trials = 8

Crop :- Sugarcane. **Ref :- Bh. 59(SFT).**

Centre :- Champaran (c.f.). **Type :- 'M'.**

Object :—Type A—To study the response of Sugarcane to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 58(SFT) type A above conducted at Champaran.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in tons/ac.	3.39	1.64	1.68	0.501	—0.65	—0.44	0.01	0.98	0.461

Control yield = 16.47 tons/ac. and no. of trials = 16

Crop :- Sugarcane. **Ref :- Bh. 58(SFT).**

Centre :- Muzaffarpur (c.f.). **Type :- 'M'.**

Object :—Type A—To study the response of Sugarcane to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 58(SFT) type A on page 794 conducted at Champaran.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in tons/ac.	1.41	2.01	0.32	0.585	—0.93	0.16	—0.73	0.65	0.336

Control yield = 15.01 tons/ac. and no. of trials = 7.

Crop :- Sugarcane. **Ref :- Bh. 59(SFT).**

Centre :- Muzaffarpur (c.f.). **Type :- 'M'.**

Object :—Type A—To study the response of Sugarcane to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 58(SFT) type A on page 794 conducted at Champaran.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in tons/ac.	3.39	1.35	0.67	0.439	0.84	0.19	0.60	1.60	0.414

Control yield = 14.19 tons/ac. and no. of trials = 12.

Crop :- Sugarcane. **Ref :- Bh. 59(SFT).**

Centre :- Gaya (c.f.). **Type :- 'M'.**

Object :—Type A—To study the response of Sugarcane to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 58(SFT) type A on page 794 conducted at Champaran.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in tons/ac.	11.37	3.14	2.00	1.136	1.86	0.90	1.27	0.90	0.488

Control yield = 21.49 tons/ac. and no. of trials = 4

Crop :- Sugarcane. **Ref :- Bh. 59(SFT).**

Site :- Champaran (c.f.). **Type :- 'M'.**

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Alluvial. (iii) Nil. (iv) Improved. (v) and (vi) N.A. (vii) Irrigated. (viii) to (x) N.A.

2. TREATMENTS :

0 =Control (no manure).
n_1' = 60 lb./ac. of N as Urea.
n_2' =120 lb./ac. of N as Urea.
n_1'' = 60 lb./ac. of N as A/S/N.
n_2'' =120 lb./ac. of N as A/S/N.
n_1'''= 60 lb./ac. of N as C/A/N.
n_2'''=120 lb./ac. of N as C/A/N.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 58(SFT) type A on page 794 conducted at Champaran.

5. RESULTS :

Treatment	0	n_1'	n_2'	n_1''	n_2''	n_1'''	n_2'''
Av. yield	19.55	27.10	28.93	26.99	27.50	26.52	27.30

G.M. = 26.27 tons/ac. ; S.E. =1.56 tons/ac. and no. of trials = 7.

Crop :- Sugarcane. **Ref :- Bh. 59(SFT).**
Site :- Champaran (c.f.). **Type :- 'M'.**

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Alluvial. (iii) Nil. (iv) Improved. (v) and (vi) N.A. (vii) Irrigated. (viii) to (x) N.A.

2. TREATMENTS :

0 =Control (no manure).
n_1' = 60 lb./ac. of N as Urea.
n_2' =120 lb./ac. of N as Urea.
n_1'' = 60 lb./ac. of N as A/S/N.
n_2'' =120 lb./ac. of N as A/S/N.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 58(SFT) type A on page 794 conducted at Champaran.

5. RESULTS :

Treatment	0	n_1'	n_2'	n_1''	n_2''
Av. yield	8.68	15.28	17.93	16.47	16.88

G.M. = 15.05 tons/ac. ; S.E. =1.293 tons/ac. and no. of trials = 8.

Crop :- Sugarcane. **Ref :- Bh. 59(SFT).**
Site :- Muzaffarpur. **Type :- 'M'.**

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses.

1. BASAL CONDITIONS and 2. TREATMENTS :

Same as in expt. no. 59(SFT) type B on page 795 conducted at Champaran.

3. DESIGN and 4. GENERAL

Same as in expt. no. 58(SFT) type A on page 794 conducted at Champaran.

5. RESULTS :

Treatment	0	n_1'	n_2'	n_1''	n_2''	n_1'''	n_2'''
Av. yield	14.79	18.24	20.52	17.92	19.06	16.84	18.92

G.M. = 18.04 tons/ac. S.E. = 0.366 tons/ac. and no. of trials = 12.

Crop :- Sugarcane. **Ref :- Bh. 59(SFT).**

Site :- Gaya (c.f.). **Type :- 'M'.**

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses

1. BASAL CONDITIONS and 2. TREATMENTS :

Same as in expt. no. 59(SFT) type B on page 795 conducted at Champaran.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 58(SFT) type A on page 794 conducted at Champaran.

5. RESULTS :

Treatment	0	n_1'	n_2'	n_1''	n_2''	n_1'''	n_2'''
Av. yield	18.09	26.36	33.30	25.06	30.03	25.95	32.60

G.M. = 27.34 tons/ac. ; S.E. = 1.397 tons/ac. and no. of trials = 4.

Crop :- Sugarcane. **Ref. :- Bh. 55(211).**

Site :- Zonal Centre, Motipur. **Type :- 'MV'.**

Object :—To compare the effects of A/N and A/S on two varieties of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Wheat. (c) 40 lb./ac. of N as A/S+50 lb./ac. of P_2O_5 as Super. (ii) (a) Calcareous soil. (b) Refer soil analysis, Motipur. (iii) 29.11.1955. (iv) (a) 3 harrowings and 2 disc ploughings. (b) Flat method. (c) 60 three-budded setts/row. (d) Rows 3′ apart. (e) Nil. (v) 100 mds/ac. of F.Y.M. a month before sowing. (vi) BO—21 (medium) and BO—22 (early). (vii) Irrigated. (viii) Earthing and interculturing with 5-tyred cultivator. (ix) 67.35″. (x) 17 to 19.1.1957.

2. TREATMENTS :

Main-plot treatments :

2 varieties : V_1=BO—21 and V_2=BO—22.

Sub-plot treatments :

7 manurial treatments : M_0=Control (no manure), M_1=60 lb./ac. of N as A/N, M_2=60 lb./ac. of N as A/S, M_3=80 lb./ac. of N as A/N, M_4=80 lb./ac. of N as A/S, M_5=120 lb./ac. of N as A/N and M_6=120 lb./ac. of N as A/S.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/replication ; 7 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) One row on either side along length. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Slight incidence of borer—no control measures taken. (iii) No of mature stalks and cane yield. (iv) (a) and (b) No. (c) None. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 28.72 tons/ac. (ii) (a) 5.44 tons/ac. (b) 2.79 tons/ac. (iii) Main effect of M alone is highly significant. (iv) Av. yield of cane tons/ac.

	M_0	M_1	M_2	M_3	M_4	M_5	M_6	Mean
V_1	21.87	16.96	26.61	29.62	30.79	34.68	29.21	27.11
V_2	23.93	28.04	30.06	30.35	31.38	36.70	31.78	30.32
Mean	22.90	22.50	28.34	29.99	31.09	35.69	30.50	28.72

S.E. of difference of two

1. V marginal means = 1.45 tons/ac.
2. M marginal means = 1.40 tons/ac.
3. M means at the same level of V = 1.97 tons/ac.
4. V means at the same level of M = 2.33 tons/ac.

Crop :- Sugarcane. **Ref. :- Bh. 54(92).**

Site :- Zonal Centre, Pachrukhi. **Type :- 'MV'.**

Object :—To compare the effect of A/N and A/S on two varieties of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) and (b) G.M. crop—Sugarcane. (c) Nil. (ii) (a) and (b) Sandy loam falling into the intra zonal saline soil group crossing the calcareous zonal soil. (b) N.A. (iii) 9.2.1954. (iv) (a) Furrowing by ridger. (b) N.A. (c) 60 three budded setts/row. (d) Rows 3′ apart. (e) Nil. (v) Nil. (vi) As per treatments. (vii) N A. (viii) Hoeing and earthing up. (ix) 29.29″. (x) 5.3.1955.

2. TREATMENTS :

Main-plot treatments :

2 varieties : V_1=CO—453 and V_2=BO—11.

Sub-plot treatments :

All combinations of (1) and (2)+a control.

(1) 2 sources of N : S_1=A/N and S_2=A/S.

(2) 3 levels of N : L_1=40, L_2=80 and L_3=120 lb./ac.

3. DESIGN :

(i) Split plot. (ii) (a) 2 main plots/block,. 7 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) 1 row each side along length. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Biometric observations and cane yield. (iv) (a) 1953—1954. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 15.48 tons/ac. (ii) (a) 4.17 tons/ac. (b) 2.93 tons/ac. (iii) Main effect of V alone is highly significant. (iv) Av. yield of cane in tons/ac.

V_1=12.83, V_2=17.31 tons/ac.

	L_1	L_2	L_3	S_1	S_2	Mean
V_1	13.15	13.64	13.08	13.30	13.29	13.29
V_2	17.49	18.24	17.72	18.01	17.62	17.82
Mean	15.32	15.94	15.40	15.65	15.55	15.48
S_1	15.11	16.38	15.47			
S_2	15.53	15.50	15.33			

S.E. of difference of two

1. V. marginal means = 0.91 tons/ac.
2. S marginal means = 0.69 tons/ac.
3. L marginal means = 0.85 tons/ac.
4. S means at the same level of V = 0.98 tons/ac.
5. V means at the same level of S = 1.20 tons/ac.
6. L means at the same level of V = 1.19 tons/ac.
7. V means at the same level of L = 1.38 tons/ac.

S.E. of body of S×L table = 0.85 tons/ac.

Crop :- Sugarcane. **Ref. :- Bh. 54(11).**

Site :- Sugarcane Sub-Stn., Patna. **Type :- 'MV'.**

Object :—To find out the response of varieties to different combinations of manures.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—*Sanai*—Paddy—Sugarcane. (b) Paddy. (c) 40 lb./ac. of N as A/S+60 lb./ac. of P_2O_5 as super. (ii) (a) Clay. (b) N.A. (iii) 5 to 10.2.1954. (iv) (a) Mould board ploughing followed by disc harrowing and then levelling. (b) Planted in rows. (c) 56 three-budded setts/row. (d) and (e) No. (v) Nil. (vi) As per treatments. (vii) Irrigated. (viii) 4 interculturings. (ix) 36.42″. (x) 7 to 10.2.1955.

2. TREATMENTS :

Main plot treatments :

2 varieties : V_1=CO—453 and V_2=BO—11.

Sub-plot treatments :

11 manurial treatments. : M_0=Control (no manure) M_1=A/S+Super, M_2=Castorcake+Super+Ammo. phos., M_3=Castorcake+Super, M_4=Mustard cake +Ammo. phos.+Super, M_5=Mustard cake+Super, M_6=Linseed cake+Ammo. phos.+Super, M_7 Linseed cake+Super,M_8=G.N.C +Ammo. Phos+Super, M_9=G.N.C. +Super and M_{10}=Ammo. Phos.+Castorcake.

Different sources of manures applied to 120 lb./ac. of N and 60 lb./ac. of P_2O_5

3. DESIGN :

(i) Split plot. (ii) (a) 2 main plots/block, 11 subs-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 53′×24′. (b) 53′×18′. (v) One row on either side of the plot. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Biometric observations and cane yield. (iv) (a) 1951—1954. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 18.8 tons/ac. (ii) (a) 3.00 tons/ac. (b) 4.22 tons/ac. (iii) Main effect of V alone is highly significant. (iv) Av. yield of cane in tons/ac.

	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7	M_8	M_9	M_{10}	Mean
V_1	22.8	22.0	20.0	18.9	30.0	22.4	26.2	20.6	22.9	23.4	24.3	23.1
V_2	13.0	11.0	18.4	14.8	14.5	13.1	15.1	12.9	15.2	17.1	14.3	14.5
Mean	17.9	16.5	19.7	16.9	22.2	17.7	20.7	16.8	19.0	20.2	19.3	18.8

S.E. of difference of two

1. V marginal means = 0.64 tons/ac.
2. M marginal means = 2.11 tons/ac.
3. M means at the same level of V = 2.98 tons/ac.
4. V means at the same level of M = 2.91 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 54(97).**

Site :- Zonal Centre, Dehri-on-Sone. **Type :- 'C'.**

Object :—To find out the best time of planting Sugarcane.

1. BASAL CONDITIONS :

(i) (a) G.M. Crop—Sugarcane. (b) *Sanai.* (c) Nil. (ii) (a) Alluvial ; non-calcareous. (b) Refer soil analysis, Dehri-on-Sone. (iii) As per treatments. (iv) (a) Three ploughings with tractor. (b) Planted in furrows. (c) 60 three-budded setts/row. (d Rows 3′. (e) Nil. (v) 120 lb./ac. of N as castor cake and 60 lb./ac. of P_2O_5 as Super applied in furrows at planting. (vi) BO—22 (medium). (vii) Irrigated. (viii) 8 to 12 interculturings and earthing up. (ix) 33.79″. (x) 15.1.1955 to 20.1.1955.

2. TREATMENTS :

8 times of planting : M_0=Mid-September, M_1=Mid-October, M_2=Mid-November, M_3=Mid-December, 1953, M_4=Mid-January, M_5=Mid-February, M_6=Mid-March and M_7=Mid-April, 1954.

3. DESIGN :

(i) R.B D. (ii) (a) 8. (b) N.A. (iii) 6. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) One row on either side along length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Biometric observations and cane yield. (iv) (a) 1950—1954. (b) No. (c) Nil. (v) (a) Harinagar, Narkatiaganj, Parsa, Majhaulia, Motihari, Motipur and Pachrukhi. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 25.62 tons/ac. (ii) 0.73 tons/ac. (iii) Treatment differences are highly significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_0	M_1	M_2	M_3	M_4	M_5	M_6	M_7
Av. yield	40.19	39.98	35.81	27.61	26.54	22.48	9.83	2.51

S.E./mean = 0.30 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 58(88).**

Site :- Zonal Centre, Harinagar. **Type :- 'C'.**

Object :—To study the effect of different leguminous crops grown in the interspaces of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) G. M. (*Sanai*)—Sugarcane. (b) *Sanai*. (c) Nil. (ii) (a) Non calcaresus ; sandy loam. (b) Refer soil analysis, Harinagar. (iii) 26, 27.11.1958. (iv) (a) Stubble breaking with disc plough, 3 harrowings and finally two beaming operations. (b) Flat method. (c) 60 mds/ac. (d) Row to row 3′. (e) Nil. (v) *Sanai* G.M. (vi) N.A. (vii) Irrigated. (viii) Interculturing with harrow at an interval of 20—30 days regularly. (ix) 39.19″. (x) 29.3.1960 to 1.4.1960.

2. TREATMENTS :

5 kinds of leguminous crops grown with Sugarcane : L_0=Control, L_1=Gram, L_2=Pea, L_3=Lentil and L_4=Hubam clover.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 60.5′×24′. (b) 60.5′×18′, (v) One row along length on both sides. (vi) Yes.

4. GENERAL :

(i) Slight lodging in November 1959. (ii) Nil. (iii) Biometric observations and cane yield. (iv) (a) to (c) N.A. (v) (a) Motipur and Motihari. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 26.43 tons/ac. (ii) 3.05 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	L_0	L_1	L_2	L_3	L_4
Av. yield	26.56	24.39	28.84	27.55	24.80

S.E./mean = 1.53 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 56(122).**

Site :- Zonal Centre, Jineshuargarh. **Type :- 'C'.**

Object :—To study the effect of different leguminous crops grown in the interspaces of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—G.M.—Sugarcane. (b) *Sanai.* (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 28.11.1956 (iv) (a) Two tractor disc ploughings and two disc harrowings with one beaming behind the harrow. (b) Flat planting. (c) 50 mds/ac. (d) Rows 3′ apart. (e) Nil. (v) *Sanai* applied. (vi) BO—14 (medium) (vii) Irrigated. (viii) 2 hoeings by spade, 2 interculturings and 1 earthing. (ix) 25.65″. (x) 20.1.1958 to 21.1.1958.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 58(88) on page 800.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Tiller no., no. of mature stalks, sucrose % and cane yield. (iv) (a) 1956—N.A. (b) No. (c) Nil. (v) (a) Harinagar, Parsa, Motipur, Majhaulia, Motihari, Pachrukhi and Warisaliganj. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 14.93 tons/ac. (ii) 4.19 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	L_0	L_1	L_2	L_3	L_4
Av. yield	16.27	13.96	14.33	15.17	14.91

S.E./mean = 2.09 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 54(112).**
Site :- Zonal Centre, Majhaulia. **Type :- 'C'.**

Object :—To find out the best time of planting for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Wheat—G.M.—Sugarcane. (b) G.M. crop. (c) Super at 3 mds/ac. (ii) (a) Calcareous soil. (b) Refer soil analysis, Majhaulia. (iii) As per treatments. (iv) (a) N.A. (b) Furrow system of planting. (c) 60 mds /ac. (d) 3′ between rows. (e) Nil. (v) Nil. (vi) BO—22. (vii) Unirrigated. (vii) Weedings at the interval of 15 to 20 days. (ix) 40″. (x) 7 to 12.2.1955.

2. TREATMENTS :

6 times of planting : M_1=Mid-October, M_2=Mid-November and M_3=Mid-December, 1953, M_4=Mid-January, M_5=Mid-February, and M_6=Mid-March, 1954.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) One row on either side along length. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Biometric observations and cane yield. (iv) (a) 1950—1954. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 32.45 tons/ac. (ii) 1.95 tons/ac. (iii) Treatment differences are significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_1	M_2	M_3	M_4	M_5	M_6
Av. yield	32.94	36.76	33.40	32.85	30.34	28.44

S.E./mean = 0.80 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 58(45).**

Site :- Zonal Centre, Motihari. **Type :- 'C'.**

Object :—To study the effect of different leguminous crops grown in the interspaces of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) G.M.—Sugarcane—G.M. (b) *Sanai*. (c) 50 lb./ac. of P_2O_5 as Super. (ii) (a) Calcareous sandy loam. (b) N.A. (iii) 2.11.1958. (iv) (a) 4 ploughings. (b) Flat planting. (c) 60 mds./ac. (d) Rows 3′ apart. (e) Nil. (v) *Sanai* buried 3 weeks before planting by disc plough and F.Y.M. at 20 C.L./ac. (vi) BO—14 (medium). (vii) Irrigated. (viii) Earthing once in June and 5 times interculturing with 5-tyred cultivator. (ix) 51-85″. (+) 20.1.1960.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 58(88) on page 800.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Tiller no ; no. of mature stalks, sucrose % and cane yield. (iv) (a) to (c) N.A. (v) (a) Harinagar and Majhaulia. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 22.53 tons/ac. (ii) 7.98 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	L_0	L_1	L_2	L_3	L_4
Av. yield	22.52	22.19	26.45	20.75	20.75

S.E./mean = 3.99 tons/ac.

Crop :- Sugarcane. **Ref :-Bh. 57(95).**

Site :- Zonal Centre, Motipur. **Type :- 'C'.**

Object :—To study the effect of different leguminous crops grown in the interspaces of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Sugarcane. (c) 60 lb./ac. of N+75 lb./ac. of P_2O_5. (ii) (a) Calcareous sandy loam. (b) Refer soil analysis, Motipur. (iii) 28.10.1957. (iv) (a) Bullock and tractor ploughings and harrowing. (b) Flat method. (c) 60 mds./ac. (d) Rows 3′ apart. (e) Nil. (v) 60 lb./ac. of N+75 lb./ac. of P_2O_5. (vi) BO—14 (medium). (vii) Irrigated. (viii) N.A. (ix) 53.57″. (x) 12.1.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 58(88) on page 800.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Biometric observations and cane yield. (iv) (a) to (c) N.A. (v) (a) Motihari, Majhaulia and Harinagar. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 18.09 tons/ac. (ii) 0.02 tons/ac. (iii) Treatment differences are highly significant. (iv) Av. yield of cane in tons/ac.

Treatment	L_0	L_1	L_2	L_3	L_4
Av. yield	19.28	17.91	15.52	17.96	19.78

S.E./mean = 0.01 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 54(104).**

Site :- Zonal Centre, Motipur. **Type :- 'C'.**

Object :—To find the best time of planting for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai*. (c) Nil. (ii) (a) Calcareous soil. (b) Refer soil analysis, Motipur. (iii) As per treatments. (iv) (a) 3 ploughings by *desi* plough. (b) Flat method. (c) 60 mds./ac. (d) Rows 3′ apart. (e) Nil. (v) *Sanai* grown and buried at site. 60 lb./ac. of N as castorcake+75 lb./ac. of P_2O_5 as Super at planting. (vi) BO—22 (early). (vii) Unirrigated. (viii) Interculturing with 5-tyred cultivator and earthing up. (ix) 43.82″. (x) 15 to 17.2.1956.

2. TREATMENTS :

6 dates of planting : T_1=15th October, T_4=15th November and T_3=15th December, 1954, T_4=15th January, T_5=15th February and T_6=15th March, 1955.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) One row on each side along length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Slight borer attack—no control measures taken. (iii) No. of mature stalks and cane yield (iv) (a) 1952—1954. (b) No. (c) Nil (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 25.43 tons/ac. (ii) 3.96 tons/ac. (iii) Treatment differences are significant. (iv) Av. yield of cane in tons/ac.

Treatment	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	28.83	20.88	24.06	24.61	28.47	25.71

S.E./mean = 1.62 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 54(99).**

Site :- Zonal Centre, Narkatiaganj. **Type :- 'C'.**

Object :—To find out the best time of planting for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Sugarcane. (c) N.A. (ii) (a) and (b) Refer soil analysis, Narkatiaganj. (iii) As per treatments. (iv) (a) Ploughing twice with mould board plough. (b) Ridge and furrow method of planting. (c) 14400 three-budded setts/ac. (d) Rows 3′ apart. (e) Nil. (v) 60 lb./ac. of N as castorcake and 75 lb./ac. of P_2O_5 as Super. (vi) BO—22 (medium). (vii) N.A. (viii) Earthing before monsoon. (ix) 66.17″. (x) 2.3.1955.

2. TREATMENTS :

6 dates of planting : D_1=13.10.1953, D_2=13.11.1953, D_3=13.12.1953, D_4=13.1.1954. D_5=13.2.1954 and D_6=13.3.1954.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) N.A. (iii) 6. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) One row on either side along length. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Biometric observations and cane yield. (iv) (a) to (c) No. (v) (a) Other zonal centres. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 27.56 tons/ac. (ii) 4.50 tons/ac. (iii) Treatment differences are highly significant. (iv) Av. yield of cane in tons/ac.

Treatment	D_1	D_2	D_3	D_4	D_5	D_6
Av. yield	33.81	32.44	31.45	29.43	29.34	9.05

S.E./mean = 1.84 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 54(90).**

Site :- Zonal Centre, Pachrukhi. **Type :- 'C'.**

Object :—To find out the best time of planting for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) G.M. Crop—Sugarcane. (b) *Sanai.* (c) Nil. (ii) (a) Sandy loam falling into the intra zonal saline soil group crossing the calcareous zonal soil. (b) N.A. (iii) As per treatments. (iv) (a) Furrowing by ridger. (b) Planting in furrows. (c) 60 three-budded setts/row. (d) 3′ between rows. (e) Nil. (v) 1200 lb./ac. of castorcake+400 lb./ac. of Super. (vi) BO—22 (medium). (vii) N.A. (viii) One hoeing and one earthing. (ix) 29.56″. (x) 14.2.1955.

2. TREATMENTS :

5 dates of planting : M_1=Mid-October, M_2=Mid-November and M_3=Mid-December, 1953, M_4=Mid-January and M_5=Mid-February, 1954.

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) 168′×60.5′. (iii) 5. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) 1 row each side lengthwise. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) N.A. (iii) Biometric observations and cane yield. (iv) (a) 1950-1954. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 25.31 tons/ac. (ii) 1.62 tons/ac. (iii) Treatment differences are highly significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_1	M_2	M_3	M_4	M_5
Av. yield	28.22	28.57	22.82	23.46	23.46

S.E./mean = 0.66 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 58(95).**

Site :- Zonal Centre, Pandual. **Type :- 'C'.**

Object :—To study the effect of different leguminous crops grown in the interspaces of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Sannhemp. (c) 50 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy loam. (b) N.A. (iii) 4, 5.11.1958. (iv) (a) Two tractor ploughings followed by one disc harrowing. (b) Flat method. (c) 60 three-budded setts/row. (d) Rows 3′ apart. (e) Nil. (v) Sannhemp buried at site. (vi) BO—14. (vii) Unirrigated. (viii) 6 inter-culturings and weeding. (ix) 43.76″. (x) 14.12.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 58(88) on page 800.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Biomatric observations and cane yield. (iv) (a) to (c) No. (v) (a) Harinagar, Majhaulia and Motihari. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 20.96 tons/ac. (ii) 1.78 tons/ac. (iii) Treatment differences are significant. (iv) Av. yield of cane in tons/ac.

Treatment	L_0	L_1	L_2	L_3	L_4
Av. yield	23.25	19.31	20.32	20.63	21.29

S.E./mean = 0.89 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 54(85).**

Site :- Zonal Centre, Parsa. **Type :- 'C'.**

Object :—To find out the best time of planting for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) G.M. crops—Sugarcane. (b) Oats. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) As per treatments. (iv) (a) 1 tractor ploughing and 2-3 light harrowings. (b) to (e) N.A. (v) G.M. applied. (vi) BO—22. (vii) Unirrigated. (viii) One interculturing, one earthing and one weeding every month. (ix) 91.7″. (x) 1st to 5th March 1955.

2. TREATMENTS :

5 dates of planting : M_1=Mid October, M_2=Mid-November and M_3=Mid-December, 1953, M_4=Mid-January and M_5=Mid-February, 1954.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 5. (iv) (a) 1/30 ac. (b) 1/40 ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Incidence of top-borer noticed. (iii) Biomatric observations and cane yield. (iv) (a) 1950—1954. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 19.76 tons/ac. (ii) 2.95 tons/ac. (iii) Treatment differences are highly significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_1	M_2	M_3	M_4	M_5
Av. yield	29.79	23.37	17.33	14.39	13.93

S.E./mean = 1.32 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 54(135).**

Site :- Sugarcane Sub-Stn., Patna. **Type :- 'C'.**

Object :—To find out the optimum number of Sugarcane setts to be planted.

1. BASAL CONDITIONS :

(i) *Sanai*—Sugarcane—*Sanai*. (b) *Sanai*. (c) 20 lb./ac. of P_2O_5 as Super. (ii) (a) Clay. (b) N.A. (iii) 5 to 7.1.1954. (iv) (a) Burying *sanai* by tractor, afterwards once ploughed by mould board plough. (b) Flat method. (c) As per treatments. (d) Rows 3′ apart. (e) —. (v) *Sanai* buried at site. (vi) CO—453. (viii) Irrigated. (viii) 3 hoeings and earthing. (ix) 36.45″. (x) 6 to 13.1.1955.

2. TREATMENTS :

9 seed rates : L_1=10,000, L_2=15,000, L_3=20,000, L_4=25,000, L_5=30,000, L_6=35,000, L_7=40,000, L_8=45,000 and L_9=50,000 setts/ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) 3′ along length on either side. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Mild attack of borers—no control measures taken. (iii) Cane yield. (iv) (a) to (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 27.83 tons/ac. (ii) 4.47 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	L_1	L_2	L_3	L_4	L_5	L_6	L_7	L_8	L_9
Av. yield	27.24	27.55	26.05	27.25	27.76	29.46	28.91	26.55	29.73

S.E./mean = 2.23 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 57(201).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'C'.**

Object :— To study the effect of different methods of planting Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) Nil. (ii) (a) Clay loam. (b) Refer soil analysis, Pusa. (iii) 13 to 20.11.1957. (iv) (a) 2 tractor ploughings and one by mould board plough and one by cultivator. (b) As per treatments. (c) 53 three-budded setts/row. (d) As per treatments. (e) Nil. (v) 80 lb./ac. of N as compost + 50 lb./ac. of N as A/S + 75 lb./ac. of P_2O_5 as Super at planting and 50 lb./ac. of N as A/S as top dressing 1 month after planting. (vi) BO—29. (vii) Irrigated. (viii) One weeding and 2 interculturings. (ix) 48.19″. (x) 4.3.1959.

2. TREATMENTS :

4 methods of planting : M_1=Shoots planted in trenches 3½′ apart, M_2=Seedlings planted in trenches 3½′ apart, M_3=Setts planted in trenches 3½′ apart and M_4=Setts planted in flat 3′ apart.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) 51′×28′ for M_1 to M_3 and 51′×24′ for M_4. (b) 51′×21′ for M_1 to M_3 and 51′×18′ for M_4. (v) 3½′ along length (for M_1 toM_3) and 3′ (for M_4). (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Cane yield and no. of mature stalks. (iv) and (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 14.68 tons/ac. (ii) 1.20 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_1	M_2	M_3	M_4
Av. yield	14.43	14.91	15.35	14.03

S.E./mean = 0.54 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 54(126).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'C'.**

Object :— To study the effect of different leguminous crops grown in the interspaces of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) G.M.—Sugarcane—Wheat. (b) *Sanai.* (c) Nil. (ii) (a) Light loam (sandy loam). (b) Refer soil analysis, Pusa. (iii) 28.11.1954. (iv) One disc ploughings followed by disc harrowing. One ploughing with senior Bihar plough followed by sub soiling and levelling. (b) Ridge planting. (c) About 15000 three-budded setts/ac. (d) Rows 3′ apart. (e) —. (v) 60 lb./ac of N as A/S + 75 lb./ac. of P_2O_5 as Super at the time of planting. (vi) BO—11 (medium). (vii) Irrigated. (viii) 3 interculturings and weeding. Earthing up in middle of June. (ix) 57.03″. (x) 24 to 29.12.1955.

2. TREATMENTS :

5 leguminous crops raised in between Sugarcane rows : L_0=Control, L_1=Gram, L_2=Pea, L_3=Lentil, and L_4=Hubam clover.

3. DESIGN :

(i) R B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) Two outer rows 3′ either side along length. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Borer incidence at early stage—Endrine was sprayed. (iii) Cane yield, no. of mature stalks and sucrose % (iv) (a) 1954—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 15.87 tons/ac. (ii) 3.56 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	L_0	L_1	L_2	L_3	L_4
Av. yield	18.87	13.80	16.03	16.79	13.87

S.E./mean =1.78 tons/ac.

Crop :- Sugarcane. **Ref. :- Bh. 57(56).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'C'.**

Object :—To study the effect of different leguminous crops grown in the interspaces of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai*. (c) N.A. (ii) (a) Light loam. (b) Refre soil analysis, Pusa. (iii) 28.10.1957. (iv) (a) 3 ploughings followed by disc harrowing. (b) Flat planting. (c) 64 three-budded setts/row. (d) Rows 3′ apart. (e) Nil. (v) *Sanai* applied 75 lb./ac. of P_2O_5 as Super+60 lb./ac. of N as A/S at the time of planting. (vi) BO—11. (vii) Irrigated. (viii) One interculture by Bihar cultivator. (ix) 30.20″. (x) 9.2.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt no. 54 (126) on page 806.

4. GENERAL :

(i) Good. (ii) Nil. (iii) No. of mature stalks, sucrose % and cane yield. (iv) (a) 1954—contd. (b) No. (c) Nil. (v) and (vi) Nil. (vii) Expts. conducted during 1955 and 1956 are N.A.

5. RESULTS :

(i) 12.33 tons/ac. (ii) 1.64 tons/ac. *(iii)* Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	L_0	L_1	L_2	L_3	L_4
Av. yield	11.50	12.64	12.31	12.49	12.71

S.E./mean = 0.82 tons/ac.

Crop :- Sugarcane. **Ref. :- Bh. 58(27).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'C'.**

Object :—To find out the effect of growing legumes in the interspaces of October planted Cane.

1. BASAL CONDITIONS :

(i) (a) G.M.—Sugarcane—G.M. (b) *Sanai.* (c) Nil. (ii) (a) Light loam. (b) Refer soil analysis Pusa. (iii) 28.10.1958. (iv) (a) Once ploughed by mould board plough followed by disc harrowing. (b) Flat method. (c) 50 mds./ac. (d) Rows 3′ apart. (e) Nil. (v) 75 lb./ac. of P_2O_5 as Super+60 lb./ac. of N as A/S before planting. (vi) BO—14. (vii) Irrigated. (viii) 5 times interculturing with 5-tyred Bihar cultivator. (ix) 45.00″. (x) 19.1.1960.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(126) on page 806.

4. GENERAL :

(i) Poor. (ii) Nil. (iii) No. of mature stalks, sucrose % and cane yield. (iv) (a) 1954—contd. (b) No. (c) Nil. (v) (a) Harinagar, Majhaulia and Motihari. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 33.89 tons/ac. (ii) 5.14 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	L_0	L_1	L_2	L_3	L_4
Av. yield	36.55	30.27	34.86	33.21	34.57

S.E. mean = 2.57 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 59(135).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'C'.**

Object :—To study the effect of different leguminous crops grown in the interspaces of Sugarcane.

1. BASAL CONDITIONS.

(i) (a) Nil. (b) *Sanai*. (c) Nil. (ii) (a) Light loam. (b) Refer soil analysis, Pusa. (iii) 2.1.1959. (iv) (a) 2 ploughings by tractor and one by *desi* plough. (b) Flat method of planting. (c) 64 three-budded setts/row. (d) Rows 3′ apart. (e) Nil. (v) F.Y.M. at 10 C.L./ac. (vi) BO—14. (vii) Irrigated. (vii) 2 weedings and one interculturing. (ix) 47.43″. (x) 18.2.1960.

2. TREATMENTS and 3. DESIGN :

Same as in expt. No. 54(126) on page 806.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Cane yield and no. of mature stalks. (iv) (a) 1954—contd. (b) No. (c) Nil. (v (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 26.44 tons/ac. (ii) 3.43 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	L_0	L_1	L_2	L_3	L_4
Av. yield	27.03	25.75	26.70	25.82	26.89

S.E./mean = 1.72 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 58(250).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'C'.**

Object :—To ascertain the proper time of harvest plant cane for securing maximum yield of ratoon crop.

1. BASAL CONDITIONS.

(i) (a) Nil. (b) *Sanai*. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Pusa. (iii) 3.12.1958. (iv) (a) 2 ploughings by tractor followed by 2 ploughings by *desi* plough. (b) Flat method of planting. (c) 32 three-budded setts/row (d) Rows 3′ apart. (e) Nil. (v) *Sanai* buried at site. (vi) BO—10, BO—11, BO—14 and BO—17. (vii) to (xi) N.A. (x) As per treatments.

2. TREATMENTS :

7 dates of harvest : M_1=November and M_2=December 1959, M_3=January, M_4=February, M_5=March, M_6=April and M_7=May 1960.

3. DESIGN :

(i) R.B.D. (a) (ii) 7. (b) Nil. (iii) 4 (for each variety). (iv) (a) 30.25′×24′. (b) 30.25′×18′. (v) 3′ length wise on either side of the plot. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Attack of stem borer in varieties BO—11 and BO—14. No control measures taken. (iii) Cane yield and no. of mature stalks. (iv) (a) to (c) N.A. (v) (a) and (b) N. A. (vi) and (vii) Nil.

5. RESULTS :

BO—11.

(i) 7.65 tons/ac. (ii) 1.42 tons/ac. (iii) Treatment differences are not significant. (iv) Av yield of cane in tons/ac.

Treatmen	M_1	M_2	M_3	M_4	M_5	M_6	M_7
Av. yield	6.92	7.23	7.96	7.63	9.96	7.44	6.39

S.E./mean = 0.71 tons/ac.

BO—10.

(i) 8.95 tons/ac. (ii) .59 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_1	M_2	M_3	M_4	M_5	M_6	M_7
Av. yield	7.38	9.45	10.39	9.76	8.51	10.29	6.84

S.E./mean = 0.49 tons/ac.

BO—14.

5. RESULTS :

(i) 7.14 tons/ac. (ii) 2.23 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_1	M_2	M_3	M_4	M_5	M_6	M_7
Av. yield	5.03	6.98	8.66	7.13	7.96	5.35	8.86

S.E./mean = 1.12 tons/ac.

BO—17.

(i) 7.00 tons/ac. (ii) 2.13 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_1	M_2	M_3	M_4	M_5	M_6	M_7
Av. yield	6.16	6.62	7.47	7.66	8.15	7.26	5.62

S.E./mean = 1.06 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 59(132).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'C'.**

Object :—To ascertain the proper harvest time of plant cane for securing maximum yield of ratoon crop.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Pusa. (iii) 11 12.1959. (iv) (a) 2 ploughings by tractor and one by mould board plough. (b) Flat method of planting. (c) 32 three-budded setts/row. (d) Rows 3′ apart. (e) —. (v) N.A. (vi) BO—10, BO—14, BO—17 and BO—29. (vii) to (ix) N.A. (x) As per treatments.

2. TREATMENTS and DESIGN :

Same as expt. no. 58(250) on page 808.

4. GENERAL

(i) Very good. (ii) Nil. (iii) Cane yield and no. of mature stalks. (iv) (a) to (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

BO—10

(i) 3.17 tons/ac. (ii) 1.15 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_1	M_2	M_3	M_4	M_5	M_6	M_7
Av. yield	2.68	2.64	2.31	3.31	3.93	3.93	3.42

S.E./mean = 0.57 tons/ac.

BO—14

(i) 5.16 tons/ac. (ii) 1.19 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_1	M_2	M_3	M_4	M_5	M_6	M_7
Av. yield	3.86	5.07	4.66	5.36	5.14	6.65	5.36

S.E./mean = 0.59 tons/ac.

BO—17

(i) 3.78 tons/ac. (ii) 1.80 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_1	M_2	M_3	M_4	M_5	M_6	M_7
Av. yield	1.65	3.16	4.15	4.89	4.26	4.33	4.00

S.E./mean = 0.90 tons/ac.

BO—29

(i) 6.62 tons/ac. (ii) 1.06 tons/ac. (iii) Treatment differences are significant. (iv) Av. yield of cane in tons/ac.

Treatment	M_1	M_2	M_3	M_4	M_5	M_6	M_7
Av yield	6.28	4.70	6.28	8.59	9.11	6.61	4.74

S.E./mean = 0.53 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 56(134).**

Site :- Zonal Centre, Warisaliganj. **Type :- 'C'.**

Object :—To study the effect of different leguminous crops sown in the interspaces of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 29,30 11.1956. (iv) (a) Burying G.M. by one tractor plough followed by 4 ploughings by *desi* plough. (b) Flat planting. (c) 60 mds./ac. (d) Rows 3′ apart. (e) —. (v) *Sanai* burried. (vi) BO—14 (medium). (vii) Irrigated. (viii) 5 interculturings operations with 5-tyred cultivator. (ix) 32.13″. (x) 20,2.1958 and 5.3.1958.

2. TREATMENTS :

5 leguminous crops grown in between sugarcane rows : L_0=Control, L_1=Gram, L_2=Pea, L_3=Lentil and L_4=Hubam clover.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) One row on either side lengthwise. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Attack of Pyrilla and white fly—Endrine was sprayed. (iii) No. of tillers and mature stalk, sucrose % and cane yield. (iv) (a) 1956—N.A. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 25.56 tons/ac. (ii) 4.16 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	L_0	L_1	L_2	L_3	L_4
Av. yield	27.73	27.26	25.71	24.32	22.77

S.E./mean = 2.08 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 55(118).**

Site :- Sugarcane Sub-Stn., Patna. **Type :- 'CV'.**

Object :—To find out the optimum number of setts to be planted for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) G.M.—Sugarcane—G.M. (b) Paddy. (c) 3 mds./ac. of A/S+3 mds./ac. of Super. (ii) (a) Clayey. (b) N.A. (iii) 17.1 1955. (iv) (a) One or two according to necessity, tractor ploughing with mould board and disc ploughs before planting. (b) Setts planted end to end. (c) 64 three-budded setts/row. (d) Rows 3′ apart. (e) —. (v) 80 lb./ac. of N as A/S+60 lb./ac of P_2O_5 as Super at planting and 40 lb./ac. of N as A/S at earthing up. (vi) As per treatments. (vii) Irrigated. (viii) 4 ploughings and earthing up. (ix) 47.04″. (x) 17 to 23.1.1956.

2. TREATMENTS :

Main-plot treatments :

2 varieties : V_1=CO—419 (late) and V_2=CO—622 (early).

Sub-plot treatments :

9 seed rates : L_1=7,000, L_2=9,000, L_3=11,000, L_4=13,000, L_5=15,000, L_6=17,000, L_7=19,000, L_8=21,000 and L_9=23,000 setts/ac.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block ; 9 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) Yes—one row on either side along length. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Mild attack of borers. (iii) Biometric observations and cane yield. (iv) (a) 1952—N.A. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 15.07 tons/ac. (ii) (a) 7.30 tons/ac. (b) 2.52 tons/ac. (iii) Main effect of L and intraction V×L are significant. (iv) Av. yield of cane in tons/ac.

	L_1	L_2	L_3	L_4	L_5	L_6	L_7	L_8	L_9	Mean
V_1	11.91	17.43	16.63	15.72	16.39	16.33	19.59	19.32	19.02	16.93
V_2	12.49	12.07	11.38	15.16	12.26	15.22	15.20	12.57	12.54	13.21
Mean	12.20	14.75	14.00	15.44	14.32	15.77	17.40	15.94	15.78	15.07

S.E. of differenee of two

1. V marginal means = 1.72 tons/ac.
2. L marginal means = 1.26 tons/ac.
3. L means at the same level of V = 1.78 tons/ac.
4. V means at the same level of L = 2.40 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 56(180).**

Site :- Sugarcane Sub-Stn., Patna. **Type :- 'CV'.**

Object : To find out the optimum number of setts to be planted for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) G.M. crop—Sugarcane. (b) *Sanai.* (c) 20 lb./ac. of P_2O_5 as Super. (ii) (a) Heavy clay. (b) N.A. (iii) 19 to 22.12.1956. (iv) (a) 2 ploughings. (b) Flat method. (c) As per treatments. (d) Row to row 3′. (e) —. (v) G.M. with *Sanai.* (vi) As per treatments. (vii) Irrigated. (viii 2 hoeings and earthing up. (ix) 32.41″. (x) 19 to 23.1.1958.

2. TREATMENTS :

Main-plot treatments :

2 varieties : V_1=CO—419 (late) and V_2=CO—622 (early).

Sub-plot treatments :

5 seed rates : $L_1=7000$, $L_2=11000$, $L_3=15000$, $L_4=19000$ and $L_5=23000$ setts/ac.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block, 5 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) One row on either side along the length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Mild attack of cane borer. (iii) Cane yield. (iv) (a) 1955—1958. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) N.A. (vii) Nil.

5. RESULTS :

(i) 10.08 tons/ac. (ii) (a) 3.79 tons/ac. (b) 1.21 tons/ac. (iii) Main effect of L and interaction L×V are highly significant. (iv) Av. yield of cane in tons/ac.

	L_1	L_2	L_3	L_4	L_5	Mean
V_1	9.32	9.38	10.35	12.60	12.73	10.88
V_2	8.21	9.88	9.34	8.61	10.34	9.28
Mean	8.77	9.63	9.85	10.61	11.54	10.08

S.E. of difference of two

1. V marginal means = 1.20 tons/ac.
2. L marginal means = 0.61 tons/ac.
3. L means at the same level of V = 0.86 tons/ac.
4. V means at the same level of L = 1.42 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 56(179).**

Site :- Sugarcane Sub-Stn., Patna. **Type :- 'CV'.**

Object :—To find out the optimum number of setts to be planted for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) G.M.—Sugarcane. (b) *Sanai.* (c) 20 lb./ac. of P_2O_5 as Super. (ii) (a) Heavy clay. (b) N.A. (iii) 9, 10.2.1956. (iv) (a) 2 ploughings. (b) Flat method. (c) As per treatment. (d) Row to row 3′. (e) —. (v) G.M. with *Sanai.* (vi) As par treatments. (vii) Irrigated. (viii) 3 hoeings and earthing up. (ix) 38.70″. (x) 15.2.1957 and 6.3.1957.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 56(180) on page 811.

5. RESULTS :

(i) 9.28 tons/ac. (ii) (a) 3.70 tons/ac. (b) 2.91 tons/ac. (iii) None of the effects is significant. (iv) Av. yield of cane in tons/ac.

	L_1	L_2	L_3	L_4	L_5	Mean
V_1	7.24	10.49	7.60	9.69	8.12	8.63
V_1	8.73	9.55	11.46	9.49	10.37	9.92
Mean	7.99	10.02	9.53	9.59	9.25	9.28

S.E. of difference of two

1. V marginal means = 1.17 tons/ac.
2. L marginal means = 1 45 tons/ac.
3. L means at the same level of V = 2.06 tons/ac.
4. V means at the same level of L = 2.18 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 58(163).**

Site :- Sugarcane Sub-Stn., Patna. **Type :- 'CV'.**

Object :—To find the optimum number of setts to be planted for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) 20 lb./ac. of P_2O_5 as Super. (ii) (a) Clayey. (b) N.A. (iii) 19 to 21.1.1958 (iv) (a) Tractor ploughing with mould board disc plough and beaming. (b) Flat method. (c) 64 three-budded setts/row. (d) Rows 3′ apart. (e) —. (v) *Sanai* buried at site. (vi) As per treatments. (vii) Irrigated. (viii) 4 hoeings and earthing up. (ix) 25.98″. (x) 1 to 6.2.1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 56(180) on page 811.

5. RESULTS :

(i) 9.97 tons/ac. (ii) (a) 1.79 tons/ac. (b) 1.20 tons/ac. (iii) Main effect of L is significant and interaction L×V is highly significant. (iv) Av. yield of cane in tons/ac.

	L_1	L_2	L_3	L_4	L_5	Mean
V_1	9.42	9.24	9.47	11.23	12.43	10.36
V_2	9.52	8.94	9.62	10.75	9.10	9.59
Mean	9.47	9.09	9.55	10.99	10.77	9.97

S.E. of difference of two

1. V marginal means = 0.57 tons/ac.
2. L marginal means = 0.60 tons/ac.
3. L means at the same level of V = 0.85 tons/ac.
4. V means at the same level of L = 1.21 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 54(8).**

Site :- Sugarcane Sub-Stn., Patna. **Type :- 'CV'.**

Object :—To find out the effect of different methods of planting for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) *Sanai*—Sugarcane—Paddy—*Sanai.* (b) *Sanai.* (c) Nil. (ii) (a) Clayey. (b) N.A. (iii) 19.2.1954. (iv) (a) Mould board ploughing followed by disc harrowing and then levelling. (b) As per treatments. (c) 64 three-budded setts/row. (d) N.A. (e) —. (v) Nil. (vi) As per treatments. (vii) Irrigated. (viii) 3 interculturings. (ix) 36.41″. (x) 22, 30.1.1955 and 4.2.1955

2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 varieties : V_1=CO—453 and V_2=BO—11.
(2) 2 methods of planting. M_1=Flat and M_2=Trench.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) One row on either side lengthwise. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Biometric observations and cane yield. (iv) (a) 1954—N.A. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 12.46 tons/ac. (ii) 3.16 tons/ac. (iii) No effect is significant. (iv) Av. yield of cane in tons/ac.

	M_1	M_2	Mean
V_1	13.95	15.23	14.59
V_2	10.79	9.86	10.33
Mean	12.37	12.55	12.46

S.E. of any marginal mean = 1.12 tons/ac.
S.E. of body of table = 1.58 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 55(113).**
Site :- Sugarcane Sub-Stn., Patna. **Type :- 'CV'.**

Object :—To find out the effect of different methods of planting for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) G.M.—Sugarcane—G.M. or Paddy. (b) *Sanai.* (c) 20 lb./ac. of P_2O_5 as Super. (ii) (a) Clayey. (b) N.A. (iii) 1.3.1955. (iv) (a) One or two tractor ploughings with mould board and disc ploughs before planting. (b) Planted end to end. (c) 64 three-budded setts/row. (d) 3′ between rows. (e) —. (v) 80 lb./ac. of N as A/S+60 lb./ac. of P_2O_5 as super at planting and 40 lb./ac. of N as A/S at earthing. (vi) As per treatments. (vii) Irrigated. (viii) 4 hoeings and earthing up. (ix) 47.04″. (x) 9,11.3.1956.

2. TREATMENTS and 3. DESIGN :

Same as in expt no. 54(8) on page 813.

4. GENERAL :

(i) Good. (ii) Slight attack of borers. (iii) Biometric observations and cane yield. (iv) (a) 1953—1955. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 19.25 tons/ac. (ii) 1.16 tons/ac. (iii) Main effect of V alone is highly significant. (iv) Av. yield of cane in tons/ac.

	M_1	M_2	Mean
V_1	21.65	23.12	22.39
V_2	16.54	15.70	16.12
Mean	19.10	19.41	19.25

S.E. of any marginal mean = 0.41 tons/ac.
S.E. of body of table = 0.58 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 55(116).**
Site :- Sugarcane Res. Stn., Patna. **Type :- 'CV'.**

Object :— To study the economics of stubble harvesting for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) G.M. Sugarcane—G.M. (b) *Sanai.* (c) 20 lb./ac. of P_2O_5 as Super. (ii) (a) Clayey. (b) N.A. (iii) 2.2.1955. (iv) (a) One or two tractor ploughings and ploughing with mould board disc ploughs before planting. (b) Setts were planted. (c) 63 three-budded-setts/row. (d) 3′ between rows. (e) —. (v) 80 lb./ac. of N as A/S + 60 lb./ac. of P_2O_5 as Super at planting and 40 lb./ac. of N as A/S at earthing. (vi) As per treatments. (vii) Irrigated. (viii) 4 hoeings and earthing. (ix) 47.04″. (x) 21.2.1956.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 varieties : V_1=CO—453 (late) and V_2=BO—11 (early).

(2) 2 methods of harvesting : S_1=Flat system and S_2=Stubble system.

3. DESIGN :

(i) Fact in R.B.D. (ii) 4. (iii) 6. (iv) (a) 30′×24′. (b) 30′×18′. (v) One row on either side along length. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Mild attack of borer. (iii) Biometric observations and cane yield. (iv) (a) 1953—1956. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 17.91 tons/ac. (ii) 2.44 tons/ac. (iii) Main effect of V is highly significant. (iv) Av. yield of cane in tons/ac.

	S_1	S_2	Mean
V_1	24.81	25.12	24.96
V_2	10.63	11.08	10.86
Mean	17.72	18.10	17.91

S.E. of any marginal mean = 1.22 tons/ac.

S.E. of body of the table = 1.73 tons/ac.

Crop :- Sugarcane **Ref :- Bh. 54(143).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'CV'.**

Object :— To find out the best time of planting Sugarcane to obtain optimum yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai*. (c) Nil. (ii) (a) Light loam. (b) Refer soil analysis, Pusa. (iii) As per treatments. (iv) (a) 3 ploughings by *desi* plough. (b) Flat method of planting. (c) 64 three-budded setts/row. (d) Rows 3′ apart. (e) —. (v) N.A. (vi) As per treatments. (vii) Irrigated. (viii) 2 weedings and one hoeing. (ix) and (x) N.A.

2. TREATMENTS :

All combinations of (1) and (2).

(1) 2 varieties : V_1=BO—11 and V_2=BO—14.

(2) 5 times of planting : M_1=November 1954, M_2=December 1954, M_3=January 1955, M_4=February 1955, M_5=March 1955.

3. DESIGN :

(i) Fact in R.B.D. (ii) (a) 5. (b) N.A. (iii) 6. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) 3′ along the length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Cane yield and no. of mature stalks. (iv) (a) to (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 22.72 tons/ac. (ii) 3.88 tons/ac. (iii) Main effect of V alone is highly significant. (iv) Av. yield of cane in tons/ac.

	M_1	M_2	M_3	M_4	M_5	Mean
V_1	18.08	21.19	22.92	20.29	20.87	20.67
V_2	23.12	27.79	24.71	24.44	23.74	24.76
Mean	20.60	24.49	23.82	22.37	22.30	22.72

S.E. of V marginal mean = 0.71 tons/ac.
S.E. of M marginal mean = 1.12 tons/ac.
S.E. of body of table = 1.59 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 54(124).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'CV'.**

Object :—To find out the best time of planting of cane to obtain optimum yield of ratoon crop of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Sugarcane. (c) G.M. applied at 60 lb./ac. of N as A/S and 75 lb./ac. of P_2O_5 as Super at the time of planting. (ii) (a) Light loam. (b) Refer soil analysis, Pusa. (iii) As per treatments. (iv) (a) One ploughing with mould board plough through the ridges after harvesting the main crop. (b) Ridge planting. (c) About 15000 three-budded setts/ac. (d) Rows 1′ apart. (e) —. (v) Castorcake at 60 mds/ac. Super at 3 mds/ac. at the time of interculturing and earthing. (vi) As per treatments. (vii) Irrigated. (viii) 5 times interculturing, weeding and earthing up. (ix) 57.03″. (x) 16 to 19.1.1956.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(143) on page 815.

4. GENERAL :

(i) Not fair. (ii) Borer infestation ; endrin was sprayed. (iii) Cane yield, counting of mature stalks and sucrose %. (iv) (a) and (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 11.27 tons/ac. (ii) 2.06 tons/ac. (iii) Main effect of T alone is highly significant. (iv) Av. yield of cane in tons/ac.

	M_1	M_2	M_3	M_4	M_5	Mean
V_1	10.65	9.73	10.61	10.28	13.26	10.91
V_2	11.35	9.70	12.41	10.76	13.96	11.64
Mean	11.00	9.72	11.51	10.52	13.61	11.27

S.E. of V marginal mean = 0.38 tons/ac.
S.E. of M marginal mean = 0.59 tons/ac.
S.E. of body of table = 0.84 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 58(212).**

Site :- Irrigation Res. Stn., Madhepura. **Type :- 'I'.**

Object :—To determine the number of irrigations required for optimum yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 8.3.1958. (iv) (a) 7 ploughings by country plough, harrowing and beaming. (b) Furrow method. (c) 55 mds/ac. (d) Row to row 3 . (e) Nil. (v) N A. (vi) BO—17. (vii) As per treatments. (viii) 4 interculturings by 5-tyred Bihar senior ridger. (ix) 62.74″. (x) 3.2.1959.

2. TREATMENTS :

4 intensities of irrigation : $I_0=0$, $I_1=2$, $I_2=4$ and $I_3=6$ irrigations.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N A. (iii) 5. (iv) (a) 115′×12′. (b) 113′×6′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Cane yield. (iv) (a) and (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 23.79 tons/ac. (ii) 2.75 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	I_0	I_1	I_2	I_3
Av. yield	21.70	24.65	23.95	24.86

S.E./mean = 1.23 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 59(142).**

Site :- Irrigation Res. Stn., Madhepura. **Type :- 'I'.**

Object :—To determine the number of irrigations required for optimum yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Groundnut. (c) 10 lbs/ac. of N as A/s+20 lb/ac. of P_2O_5 as Super. (ii) (a) Sandy loam. (b) N.A. (iii) N.A. (iv) (a) 7 ploughings, harrowing and beaming. (b) Furrow method. (c) 55 mds/ac. (d) Row to row 3′. (e) —. (v) Nil. (vi) BO—17. (vii) As per treatments. (viii) 4 interculturings by 5-tyred Bihar senior ridging plough. (ix) and (x) N.A.

2. TREATMENTS :

5 intensities of irrigation : $I_1=1$, $I_2=3$, $I_3=4$, $I_4=6$ and $I_5=7$ irrigations.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 100′×11′. (b) 98′×6′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Water logged. (ii) slight incidence of stem-borer. (iii) Cane yield. (iv) (a) 1959—contd. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 19.46 tons/ac. (ii) 7.30 tons/ac. (iii) Treatment differences are not significant. (iv) Av. yield of cane in tons/ac.

Treatment	I_1	I_2	I_3	I_4	I_5
Av. yield	15.34	16.33	29.77	17.30	18.54

S.E./mean = 3.65 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 57(245).**

Site :- Irrigation Res. Sub-Stn., Bikramganj. **Type :- 'IM'.**

Object :—To find out the best combination of manurial dose and irrigation for high yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Paddy. (c) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (iii) (a) Sandy loam. (b) N.A. (iii) 24 to 27.2.57. (iv) (a) 7 ploughings. (b) Flat method. (c) 40 mds/ac. (d) Row to row 3′. (e) —. (v) Nil. (vi) BO—11. (vii) As per treatments. (viii) Interculturing after each irrigation. (ix) 26.88″. (x) 29.1.58 to 3.2.1958.

2. TREATMENTS :

Main-plot treatments :

3 intensities of irrigation : $I_1=2, I_2=4$ and $I_3=6$ irrigations.

Sub-plot treatments :

3 manurial treatments : M_0=Control M_1=80 lbs./ac. of N as A/S+60 lbs./ac. of P as Super and M_2= 120 lb./ac. of N as A/S+90 lb./ac. of P_2O_5 as Super.

3. DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/replication ; 3 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) 49′×21′. (b) 43′×15′. (v) 3′ all round the plot. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Cane yield. (iv) (a) and (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 8.18 tons/ac. (ii) (a) 1.99 tons/ac. (b) 1.39 tons/ac. (iii) All effects are highly significant. (iv) Av. yield of cane in tons/ac.

	M_0	M_1	M_2	Mean
I_1	3.00	4.74	4.91	4.22
I_2	5.14	8.26	9.89	7.76
I_3	9.07	13.11	15.50	12.56
Mean	5.74	8.70	10.10	8.18

S.E. of difference of two

1. I marginal means = 0.66 tons/ac.
2. M marginal means = 0.46 tonp/ac.
3. M means at the same level of I = 0.80 tons/ac.
4. I means at the same level of M = 0.93 tons/ac.

* * *

Crop :- Sugarcane. **Ref :- Bh. 54(96).**

Site :- Zonal Centre, Dehri-on-Sone. **Type :- 'IM'.**

Object :—To find out the dose and time of application of A/S in combination with irrigation for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) G.M. crop—Sugarcane. (b) *Sanai.* (c) Nil. (ii) (a) Coarse gray sand. (b) Refer soil analysis, Dehri-on-Sone. (iii) 28.11.1953. (iv) (a) Three ploughings with tractor. (b) Planted in furrows. (c) 60 three-budded setts/row. (d) Rows 3′ apart. (e) Nil. (v) —. (vi) CO. K. 32—(medium). (vii) Irrigated. (viii) Interculturings and earthing up. (ix) 33.79″. (x) 13 to 18.2.1955.

2. TREATMENTS :

Main-plot treatments :

2 levels of irrigation : $I_1=6$ and $I_2=12$ irrigations.

Sub-plot treatments :

All combinations of (1) and (2)

(1) 3 levels of N as A/S : $N_0=0$, $N_1=40$ and $N_2=80$ lb./ac.

(2) 2 times of application of N : T_1=at planting and $T_2=\frac{1}{2}$ at planting+$\frac{1}{2}$ at earthing.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block and 6 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) One row on either side along length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) There was mild attack of white-fly—no control measures were taken. (iii) Biometric observations and cane yield. (iv) (a) and (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

RESULTS :

(i) 13.42 tons/ac. (ii) (a) 4.45 tons/ac. (b) 3.98 tons/ac. (iii) Main effect of N alone is highly significant. (iv) Av. yield of cane in tons/ac.

	N_0	N_1	N_2	Mean	T_1	T_2
I_1	10.92	13.20	10.30	11.47	12.15	10.79
I_2	16.69	15.09	14.31	15.36	15.34	15.39
Mean	13.80	14.15	12.31	13.42	13.75	13.09
T_1	—	15.91	12.11			
T_2	—	12.38	12.50			

S.E. of difference of two

1. I marginal means = 1.05 tons/ac.
2. N marginal means = 1.15 tons/ac
3. T marginal means of I×T table = 0.94 tons/ac.
4. N means at the same level of I = 1.63 tons/ac.
5. I means at the same level of N = 1.69 tons/ac.
6. T means at the same level of I = 1.33 tons/ac.
7. I means at the same level of T = 1.41 tons/ac.

S.E. of body of N×T table = 1.15 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 56(143).**

Site :- Zonal Centre, Harinagar. **Type :- 'IM'.**

Object :—To find out the optimum dose of A/S in combination with Super and irrigation for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) No. (ii) (a) Sandy loam. (b) Refer soil analysis, Harinagar. (iii) 10.11.1956. (iv) (a) 2 tractor ploughings and 5 harrowings by disc harrow. (b) Flat planting. (c) 60 mds/ac. (d) Rows 3′ apart. (e) —. (v) Nil. (vi) BO—14. (vii) As per treatments. (viii) 6 intercultural operations with 5-tyred cultivator. (ix) 66.26″. (x) 1 to 4.3.1958.

2. TREATMENTS :

Main-plot treatments :

4 levels of irrigation : I_0=Control, I_1=2, I_2=4 and I_3=6 irrigations.

Sub-plot treatments :

5 manurial treatments : M_0=Control, M_1=60 lb./ac. of N as A/S+75 lb./ac. of P_2O_5 as Super, M_2=2 times as in M_1, M_3=3 times as in M_1 and M_4=4 times as in M_1.

3. DESIGN :

(i) Split-plot. (iv) (a) 4 main-plots/block ; 5 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) One row on each side along length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Tiller count., no. of mature stalks, sucrose % and cane yield. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) (a) Majhaulia, Jineshwargarh, Pachrukhi and Motihari. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 25.02 tons/ac. (ii) (a) 1.51 tons/ac. (b) 1.20 tons/ac. (iii) Main effects and interaction are highly significant. (iv) Av. yield of cane in tons/ac.

	M_0	M_1	M_2	M_3	M_4	Mean
I_0	23.45	20.04	22.61	21.51	23.78	22.28
I_1	26.72	24.81	25.03	26.46	24.37	25.48
I_2	24.11	25.54	26.97	30.61	22.97	26.04
I_3	26.42	26.68	26.53	26.83	24.88	26.27
Mean	25.18	24.27	25.29	26.35	24.00	25.02

S.E. of difference of two

1. I marginal means = 0.48 tons/ac.
2. M marginal means = 0.43 tons/ac.
3. M means at the same level of I = 0.85 tons/ac.
4. I means at the same level of M = 0.90 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 57(110).**

Site :- Zonal Centre, Harinagar. **Type :- 'IM'.**

Object :—To find out the optimum dose of A/S in combination with Super and irrigation for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) G.M.—Sugarcane—G.M. crop. (b) *Sanai*. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Harinagar. (iii) 17, 18.11.1957. (iv) (a) 4 ploughings followed by disc harrowing (b) Flat method. (c) 60 mds/ac. (d) Rows 3′ apart. (e) —. (v) *Sanai* buried at site. (vi) BO—17. (vii) As per treatments. (viii) One interculturing and one earthing. (ix) 69.98″. (x) 13.3.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 56(143) on page 819.

4. GENERAL :

(i) Normal. (ii) Borer attack. (iii) Biometric observations and cane yield. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) (a) Motihari and Pachrukhi. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 24.49 tons/ac. (ii) (a) 8.59 tons/ac. (b) 6.20 tons/ac. (iii) Main effect of M and interaction I × M are highly significant. (iv) Av. yield of cane in tons/ac.

	M_0	M_1	M_2	M_3	M_4	Mean
I_0	17.38	19.29	23.91	23.69	27.84	22.42
I_1	18.66	21.42	31.77	26.04	25.09	24.60
I_2	17.78	28.80	33.06	26.04	24.94	26.12
I_3	15.98	24.87	28.32	29.13	25.75	24.81
Mean	17.45	23.60	29.27	26.23	25.91	24.49

S.E. difference of two

1. I marginal means = 2.72 tons/ac.
2. M marginal means = 2.19 tons/ac.
3. M means at the same level I = 3.10 tons/ac.
4. I means at the same level of M = 4.77 tons/ac.

Crop :- Sugarcane. **Ref. :- Bh. 58(90).**

Site :- Zonal Centre, Harinagar. **Type :- 'IM'.**

Object :—To find out the optimum dose of A/S in combination with Super and irrigation for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) G.M. crop—(*Sanai*)—Sugarcane. (b) *Sanai*. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Harinagra. (iii) 6.11.1958. (iv) (a) Stubble breaking with disc plough followed by G.M., 4 harrowings and beaming. (b) Flat method. (c) 60 mds./ac. (d) Row to row 3′. (e) —. (v) G.M. with *Sanai*. (vi) BO—17. (vii) As per treatments. (viii) Harrowing after germination, earthing up in July. (ix) 39.19″. (x) 25 to 30.4.60.

2. TREATMENTS and 3. DESIGN :

Same as in expt no. 56(143) on page 819.

4. GENERAL :

(i) Slight lodging in November, 1959. (ii) Nil. (iii) Germinations, no. of tillers, no. of mature stalks, cane height and cane yield. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) (a) Majhaulia and Motihari. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 25.29 tons/ac. (ii) (a) 7.69 tons/ac. (b) 8.20 tons/ac. (iii) Main effect of I and interaction M×I are significant. (iv) Av. yield of cane in tons/ac.

	M_0	M_1	M_2	M_3	M_4	Mean
I_0	19.36	19.36	22.30	20.94	18.73	20.14
I_1	20.24	23.22	24.39	26.60	27.40	24.37
I_2	19.29	26.15	33.39	37.62	27.77	28.84
I_3	25.60	23.14	32.11	26.04	32.11	27.80
Mean	21.12	22.97	28.05	27.80	26.50	25.29

S.E. of difference of two

1. I marginal means = 2.43 tons/ac.
2. M marginal means = 2.90 tons/ac.
3. M means at the same level of I = 4.10 tons/ac.
4. I means at the same level of M = 5.73 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 56(120).**

Site :- Zonal Centre, Jineshwargarh. **Type :- 'IM'.**

Object : - To find out the optimum dose of A/S in combination with Super and irrigation for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—G.M.—Sugarcane. (b) *Sanai.* (c) Nil. (ii) (a) Sandy loam to sandy. (b) N.A. (iii) 30.11.1956. to 1.12.1956. (iv) (a) *Sanai* buried by disc plough and 4 ploughings by *desi* plough. (b) Flat planting. (c) 60 three-budded setts/row. (d) Rows 3′ apart. (e) —. (v) *Sanai* buried 3 weeks before planting. (vi) BO—14 (medium). (vii) As per treatments. (viii) Intercultural operation with bullock driven 5-tyred cultivator one followed after each irrigation. (ix) 25.95″. (x) 22 to 26.1.1958.

2. TREATMENTS :

Main-plot treatments.

3 irrigation levels : $I_1=6$, $I_2=9$ and $I_3=12$ irrigations.

Sub-plot treatments.

5 manurial treatments : M_0=Control, M_1=80 lb./ac. of N as A/S+60 lb./ac. of P_2O_5 as Super, M_2=2 times M_1, M_3=3 times M_1 and M_4=4 times M_1.

3. DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/block ; 5 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 40.5′×24′. (b) 40.5′×18′. (v) One row on either side along length. (vi) Yes.

4. GENERAL :

(i) Poor germination but growth satisfactory. (ii) Nil. (iii) No. of mature stalks, sucrose % and cane yield. (iv) (a) 1956—N.A. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 13.15 tons/ac. (ii) (a) 5.09 tons/ac. (b) 4.63 tons/ac. (iii) Main effect of I alone is significant. (iv) Av. yield of cane in tons/ac.

	M_0	M_1	M_2	M_3	M_4	Mean
I_1	12.93	8.96	4.96	6.17	8.96	8.40
I_2	17.96	19.69	16.09	10.95	13.88	15.71
I_3	13.96	16.71	14.47	18.07	13.44	15.33
Mean	14.95	15.12	11.84	11.73	12.09	13.15

S.E. of difference of two

1. I marginal means = 1.61 tons/ac.
2. M marginal means = 1.89 tons/ac.
3. M means at the same level of I = 3.27 tons/ac.
4. I means at the same level of M = 3.34 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 57(82).**

Site :- Zonal Centre, Majhaulia. **Type :- 'IM'.**

Object :—To find out the optimum dose of A/S in combination with Super and irrigation for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) *Sanai*—Sugarcane—*Sanai*. (b) *Sanai*. (c) 226 lb./ac. of Super. (ii) (a) Calcareous sandy loam. (b) Refer soil analysis, Majhaulia (iii) 26 to 28.2.1957. (iv) (a) 2 ploughings by tractor drawn harrow followed by *hinga*. (b) Flat planting. (c) 60 mds./ac. (d) Rows 3′ apart. (e) —. (v) *Sanai* as G.M. (vi) BO—14. (vii) As per treatments. (viii) 6 fortnightly interculturing with 5-tyred cultivator. (ix) 28.41″. (x) 13 to 15.3.1958.

2. TREATMENTS :

Same as in expt. no. 56(143) on page 819.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plot/block ; 5 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 40.5′×24′. (b) 40.5′×18′. (v) One row on either side. (vi) Yes.

4. GENERAL:

(i) Good. (ii) Nil. (iii) Tiller count, no. of mature stalks, sucrose % and cane yield. (v) (a) 1957—1959. (b) No. (c) Nil. (v) (a) Harinagar, Narkatiganj, Parsa, Motihari and Motipur. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 28.09 tons/ac. (ii) (a) 8.36 tons/ac. (b) 2.34 tons/ac. (iii) No effect is significant. (iv) Av. yield of cane in tons/ac.

	M_0	M_1	M_2	M_3	M_4	Mean
I_0	27.22	27.37	24.54	28.31	27.37	26.96
I_1	23.80	27.77	30.41	29.09	29.50	28.11
I_2	26.23	29.64	27.11	30.30	27.67	28.19
I_3	25.35	28.87	29.31	30.52	31.33	29.08
Mean	25.65	28.41	27.84	29.56	28.97	28.09

S.E. of difference of two

1. I marginal means = 2.64 tons/ac.
2. M marginal means = 0.83 tons/ac.
3. M means at the same level of I = 1.66 tons/ac.
4. I means at the same level of M = 3.03 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 58(283).**

Site :- Zonal Centre, Majhaulia. **Type :- 'IM'.**

Object :—To find out the optimum dose of A/S in combination with Super and irrigation for Sugarcane.

1· BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Calcareous soil. (b) Refer soil analysis Majhaulia. (iii) N.A. (iv) (a) 5 ploughings. (b) Flat method. (c) 60 mds/ac. (d) Row to row 3′. (e) —. (v) Nil. (vi) BO—17. (vii) As per treatments. (viii) 2 weedings, interculturing and earthing up. (ix) and (x) N.A.

2. TREATMENTS :

Same as in expt. no. 56(143) on page 819.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/replication; 5 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 40.5′×24′ (b) 40.5′×18′. (v) one row on either side along length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Cane yield (iv) (a) 1957-1959. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 27.2 tons/ac. (ii) (a) 8.85 tons/ac. (b) 4.48 tons/ac. (iii) Main effect of M alone is significant. (iv) Av. yield of cane in tons/ac.

	M_0	M_1	M_2	M_3	M_4	Mean
I_0	20.4	21.1	29.1	33.3	31.4	27.1
I_1	21.2	23.3	28.1	30.4	33.1	27.2
I_2	20.0	29.6	31.4	30.4	30.1	28.3
I_3	18.4	31.0	26.1	26.0	30.6	26.4
Mean	20.0	26.3	28.7	30.0	31.3	27.2

S.E. of difference of two

1. I marginal means = 2.80 tons/ac.
2. M marginal means = 1.58 tons/ac.
3. M means at the same level of I = 3.17 tons/ac.
4. I means at the same level of M = 3.98 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 59(200).**

Site :- Zonal Centre, Majhaulia. **Type :- 'IM'.**

Object :—To find out the optimum dose of A/S in combination with Super and irrigation for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Calcareous soil. (b) Refer soil analysis, Majhaulia. (iii) N.A. (iv) (a) 6 ploughings. (b) Flat method. (c) 60 mds/ac. (d) Row to row 3′. (e) Nil. (v) Nil. (vi) BO—17. (vii) As per treatments. (viii) Weeding, interculturing and earthing up. (ix) and (x) N.A.

2. TREATMENTS :

Same as in expt. no. 56(143) on page 819.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/replication ; 5 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 40.5′×24′ 40.5′×18′. (v) One row on either side along the length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Cane yield. (iv) (a) 1957-59. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 21.98 tons/ac. (ii) (a) 2.27 tons/ac. (b) 2.75 tons/ac. (iii) Main effect of M and interaction $M \times I$ ar significant. (iv) Av. yield of cane in tons/ac.

	M_0	M_1	M_2	M_3	M_4	Mean
I_0	13.37	17.63	24.76	23.99	25.68	21.09
I_1	17.82	22.70	23.03	22.52	24.24	22.06
I_2	16.49	24.50	23.80	22.19	25.12	22.42
I_3	17.30	18.29	27.11	26.56	22.41	22.33
Mean	16.25	20.78	24.68	23.82	24.36	21.98

S.E. of difference two

1. I marginal means = 0.72 tons/ac.
2. M marginal means = 0.97 tons/ac.
3. M means at the same level of I = 1.94 tons/ac.
4. I means at the same level of M = 1.88 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 56(129).**

Site :- Zonal Centre, Majhaulia. **Type :- 'IM'.**

Object :—To find out the dose and time of application of A/S in combination with irrigation for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) G.M. crop—Sugarcane—G.M. crop—Wheat. (b) *Sanai.* (c) 2½ mds/ac. of Super. (ii) (a) Alluvia calcareous. (b) Refer soil analysis, Majhaulia. (iii) 28 to 31.3.1956. (iv) (a) 2 ploughings and harrowing. (b) Flat method. (c) 60 mds/ac. (d) Row to row 3′. (e) —. (v) G.M. (vi) BO—21. (vii) As per treatments. (viii) Fortnightly interculturing with 5-tyred cultivator and earthing up. (ix) 26.84″. (x) 9 to 12.3.1957.

2. TREATMENTS :

Main-plot treatments :

2 levels of irrigation : I_0=No irrigation and I_1=3 irrigations.

Sub-plot treatments :

All combination of (1) and (2)

(1) 3 levels of N as A/S : $N_0=0$, $N_1=40$ and $N_2=80$ lb./ac.

(2) 2 times of application : T_1=Total N at planting and T_2=½ at planting+½ at earthing.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block ; 6 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 60.5′×24′. (b) 60.5′×18′ (v) One row 3′ an either side. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Biometric observations and cane yield. (iv) (a) to (c) N.A. (v) (a) Harinagar, Narkatiaganj, Motipur, Pachrukhi, Warisaliganj, Sepaya and Parsa. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 22.83 tons/ac. (ii) (a) 7.92 tons/ac. (b) 3.64 tons/ac. (iii) Main effect of I alone is significant. (iv) Av. yield of cane in tons/ac.

	N_0	N_1	N_2	Mean	T_1	T_2
I_0	20.94	19.86	20.67	20.49	20.88	20.09
I_1	25.16	24.91	25.48	25.18	25.64	24.72
Mean	23.05	22.38	23.07	22.83	23.26	22.40
T_1	—	23.24	23.37			
T_2	—	21.52	22.77			

S.E. of difference of two

1. I marginal means = 2.17 tons/ac.
2. N marginal means = 1.29 tons/ac.
3. T marginal means of I×T table = 1.05 tons/ac.
4. N means at the same level of I = 1.82 tons/ac.
5. I means at the same level of N = 2.73 tons/ac.
6. T means at the same level of I = 1.49 tons/ac.
7. I means at the same level of T = 2.51 tons/ac.

S.E. of body of N×T table = 1.29 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 56(130).**

Site :- Zonal Centre, Motihari. **Type :- 'IM'.**

Object :—To find out the optimum dose of A/S in combination with Super and irrigation for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) 50 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy loam; calcareous soil. (b) N.A. (iii) 13.11.1956. (iv) (a) Burying of G.M. followed by one tractor ploughing and twice harrowing by disc harrow. (b) Flat method. (c) 60 mds/ac. (d) Row to row 3′. (e) —. (v) G.M. with *sanai*. (vi) BO—17. (vii) As per treatments. (viii) 3 interculturings with 5-tyred cultivator. (ix) 41.07″. (x) 22 to 30.1.1958.

2. TREATMENTS :

Same as in expt. no. 56(143) on page 819.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/replication ; 5 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 40.5′×24′. (b) 40.5′×18′. (v) One row on either side along length. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Nil. (iii) Biometric observations and cane yield. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 20.55 tons/ac. (ii) (a) 4.89 tons/ac. (b) 4.85 tons/ac. (iii) Main effects and interaction are significant. (iv) Av. yield of cane in tons/ac.

	M_0	M_1	M_2	M_3	M_4	Mean
I_0	12.86	16.49	26.41	14.11	22.37	18.45
I_1	21.16	15.06	18 48	20.39	21.64	19.35
I_2	15.02	23.07	22.92	24.39	22.15	21.51
I_3	15.83	19.32	27.51	24.79	27.00	22.89
Mean	16.22	18.49	23.83	20.92	23.29	20.55

S.E. of difference of two

1. I marginal means = 1.55 tons/ac.
2. M marginal means = 1.71 tons/ac.
3. M means at the same level of I = 3.43 tons/ac.
4. I means at the same level of M = 3.44 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 57(79).**

Site :- Zonal Centre, Motihari. **Type :- 'IM'.**

Object :—To find out the optimum dose of A/S in combination with Super and irrigation for Sugarcane

1. BASAL CONDITIONS :

(i) (a) G.M. crop—Sugarcane—G.M. crop. (b) *Sanai.* (c) 50 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy loam (calcareous). (b) N.A. (iii) 1.11.1957. (iv) (a) 4 ploughings by *desi* plough. (b) Row planting. (c) 60 three-budded setts/row. (d) Rows 3′ apart. (e) —. (v) F.Y.M. at 10 C.L./ac. and *sanai* buried 3 weeks before planting. (vi) BO—17. (vii) As per treatments. (viii) Three harrowings and weedings. (ix) 55.61″. (x) 10 to 15.1.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 56(143) on page 819.

4. GENERAL :

(i) No lodging. (ii) Nil. (iiii) Biometric observations and cane yield. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) (a) Harinagar and Lalgarh. (b) Nil. (vi) and (vii) Nil.

5. RESULTS:

(i) 38.0 tons/ac. (ii) (a) 11.14 tons/ac. (b) 9.83 tons/ac. (iii) No effect is significant. (iv) Av. yield of cane in tons/ac.

	M_0	M_1	M_2	M_3	M_4	Mean
I_0	29.2	37.0	30.9	37.0	33.5	33.5
I_1	39.8	35.2	38.6	35.7	37.6	37.4
I_2	36.0	39.6	42.6	35.6	42.1	39.2
I_3	39.5	38.0	46.0	45.1	40.2	41.8
Mean	36.1	37.5	39.5	38.4	38.4	38.0

S.E. of difference of two

1. I marginal means = 3.52 tons/ac.
2. M marginal means = 3.48 tons/ac.
3. M means at the same level of I = 6.95 tons/ac.
4. I means at the same level of M = 7.15 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 58(51).**

Site :- Zonal Centre, Motihari. **Type :- 'IM'.**

Object :—To find out the optimum dose of A/S in combination with Super and irrigation for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) *Sanai*—Sugarcane—*Sanai.* (b) *Sanai.* (c) 50 lb./ac. of P_2O_5 as Super. (ii) (a) Calcareous sandy loam. (b) N.A. (iii) 31.10.1958. (iv) (a) Stubble breaking with disc harrow, burying *sanai* by disc plough 4 ploughings by *desi* plough. (b) Flat method. (c) 60 mds/ac. (d) Row 3′ apart. (e) —. (v) *Sanai* buried+F.Y.M. at 10 C.L./ac. (vi) BO—17 (medium). (vii) As per treatments. (viii) 6 interculturings with 5-tyred cultivator, earthing up in June. (ix) 54.85″. (x) 12.1.1960.

2. TREATMENTS :

Same as in expt. no. 56(143) on page 819.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/replication ; 5 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 40.5′×24′. (b) 40.5′×18′. (v) One row on either side along length. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Biometric observations and cane yield. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) (a) Harinagar and Majhaulia. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 17.72 tons/ac. (ii) (a) 31.41 tons/ac. (b) 7.98 tons/ac. (iii) Main effect of M alone is highly significant. (iv) Av. yield of cane in tons/ac.

	M_0	M_1	M_2	M_3	M_4	Mean
I_0	12.42	13.44	20.13	17.34	14.80	15.63
I_1	11.09	16.20	15.02	22.30	15.72	16.07
I_2	11.06	18.33	22.11	19.43	22.99	18.78
I_3	15.28	16.82	19.58	31.22	19.14	20.41
Mean	12.46	16.20	19.21	22.57	18.14	17.72

S.E. of difference of two

1. I marginal means = 9.93 tons/ac.
2. M marginal means = 2.82 tons/ac.
3. M means at the same level of I = 5.64 tons/ac.
4. I means at the same level of M = 11.14 tons/ac.

* * *

Crop :- Sugarcane. **Ref. :- Bh. 54(94).**

Site :- Zonal Centre, Narkatiaganj. **Type :- 'IM'.**

Object :—To find out the dose and time of application of A/S in combination with irrigation for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) G.M.—Sugarcane. (b) Sugarcane. (c) 6 mds./ac. of castorcake+1¼ mds./ac. of A/S+1¼ mds./ac. of Super. (ii) (a) Sandy loam. (b) Refer soil analysis, Narkatiaganj. (iii) 14 to 25.11.1953. (iv) (a) Ploughing twice with mould board plough. (b) Ridge and furrow method of planting. (c) 14400 three-budded setts/ac. (d) Rows 3′ apart. (e) —. (v) Nil. (vi) As per treatments. (viii) Earthing with ridger was done before monsoon. (ix) 65.49″. (x) 15 to 17.1.1955.

2. TREATMENTS :

Main-plot treatments :

2 levels of irrigation : I_0=No irrigation and I_1=3 irrigations.

Sub-plot treatments :

All combinations of (1) and (2)

(1) 3 levels of N as A/S : $N_0=0$, $N_1=40$ and $N_2=80$ lb./ac.

(2) 2 times of application : T_1=Total N at planting and $T_2=\frac{1}{2}$ at planting+$\frac{1}{2}$ at earthing.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block; 6 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) One row on either side. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Biometric observations and cane yield. (iv) (a) 1954—1956. (b) No. (c) Nil. (v) (a) Other zonal centre. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 24.34 tons/ac. (ii) (a) 6.36 tons/ac. (b) 3.10 tons/ac. (iii) Main effect of N alone is highly significant. (iv) Av. yield of cane in tons/ac.

	N_0	N_1	N_2	Mean	T_1	T_2
I_0	21.56	25.36	24.61	23.84	23.94	23.75
I_1	13.14	23.94	27.45	24.84	25.22	24.46
Mean	22.35	24.65	26.03	24.34	24.58	24.10
T_1	—	25.30	26.56			
T_2	—	24.00	25.50			

S.E. of difference of two

1. I marginal means = 1.50 tons/ac. 5. I means at the same level of N = 1.82 tons/ac.
2. N marginal means = 0.89 tons/ac. 6. T means at the same level of I = 1.03 tons/ac.
3. T marginal means of I×T table = 0.73 tons/ac. 7. I means at the same level of T = 1.68 tons/ac.
4. N means at the same level of I = 1.27 tons/ac. S.E. of body of N×T table = 0.89 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 56(133).**
Site :- Zonal Centre, Narkatiaganj. **Type :- 'IM'.**

Object :—To find out the dose and time of application of A/S in combination with irrigation for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) G.M.—Sugarcane—G.M. (b) *Sanai.* (c) 17.9 lb./ac. of P_2O_5 as Super. (ii) (a) Non calcareous. (b) Refer soil analysis, Narkatiaganj. (iii) 5, 6.2.1956. (iv) (a) Stubble breaking with disc plough; 2 ploughings by tractor drawn harrow plough followed by *hinga* each time. (b) Flat planting. (c) 50 mds/ac. (d) Rows 3′ apart. (e) —. (v) *Sanai* buried at site. (vi) BO—21 (medium). (vii) As per treatments. (viii) 4 interculturing operations with 5-tyred cultivator earthing in June. (ix) N.A. (x) 7 to 12.3.1957.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(94) on page 827.

4. GENERAL :

(i) Average. (ii) N.A. (iii) No. of mature stalks. No. of tillers, sucrose % and cane yield. (iv) (a) 1954—1956. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 18.98 tons/ac. (ii) (a) 4.58 tons/ac. (b) 3.95 tons/ac. (iii) No effect is significant. (iv) Av. yield of of cane in tons/ac.

	N_0	N_1	N_2	Mean	T_1	T_2
I_0	16.80	18.62	19.54	18.32	17.87	18.77
I_1	18.07	20.61	20.20	19.63	19.83	19.42
Mean	17.44	19.62	19.87	18.98	18.85	19.10
T_1	—	20.50	19.32			
T_2	—	18.73	20.42			

S.E. of difference of two

1. I marginal means = 1. 5 tons/ac. 5. I means at the same level of N = 1.82 tons/ac.
2. N marginal means = 0.89 tons/ac. 6. T means at the same level of I = 1.03 tons/ac.
3. T marginal means of I×T table = 0.73 tons/ac. 7. I means at the same level of T = 1.63 tons/ac.
4. N means at the same level of I = 1.27 tons/ac. S.E. of body of N×T table = 0.89 ton/sac.

Crop :- Sugarcane. **Ref :- Bh. 57(114).**
Site :- Zonal Centre, Pachrukhi. **Type :- 'IM'.**

Object :—To find out the optimum dose of A/S in combination with Super at different levels of irrigation for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) G.M.—Sugarcane. (b) *Sanai.* (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 5.11.1957. (iv) (a) One disc ploughing, two cultivator ploughings, one harrowing and beaming. (b) Flat method. (c) 65 mds./ac. (d) Row to row 3′. (e) —. (v) G.M. with *Sanai.* (vi) BO—17. (vii) As per treatments. (viii) 6 times interculturing and 6 times weeding. (ix) N.A. (x) 10.1.1959.

2. TREATMENTS :

Main-plot treatments.

4 levels of irrigation : I_0=Control, I_1=2, I_2=4 and I_3=6 irrigations.

Sub-plot treatments.

5 manurial treatments : M_0=Control, M_1=60 lb./ac. of N as A/S+75 lb./ac. of P_2O_5 as Super, M_2=2 times in M_1, M_3=3 times in M_1 and M_4=4 times in M_1.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/block; 5 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 40.5′×24′. (b) 40.5′×18′. (v) One row on either side along length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Attack of termite. (iii) Tiller count, height and cane yield. (iv) (a) 1957—1959. (b) No. (c) Nil. (v) (a) Harinagar and Narkatiaganj. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 18.65 tons/ac. (ii) (a) 4.46 tons/ac. (b) 4.30 tons/ac. (iii) Main effects and interactions are significant. (iv) Av. yield of cane in tons/ac.

	M_0	M_1	M_2	M_3	M_4	Mean
I_0	12.34	15.98	16.42	16.24	15.76	15.35
I_1	17.19	21.30	17.30	19.54	16.68	18.40
I_2	13.92	20.75	19.47	21.19	15.54	18.17
I_3	14.25	24.17	23.66	28.39	22.81	22.66
Mean	14.43	20.55	19.21	21.34	17.70	18.65

S.E. of difference of two

1. I marginal means = 1.41 tons/ac.
2. M marginal means = 1.52 tons/ac.
3. M means at the same level of I = 3.04 tons/ac.
4. I means at the same level of M = 3.06 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 57(115).**

Site :- Zonal Centre, Pachrukhi. **Type :- 'IM'.**

Object :—To find out the optimum dose of A/S in combination with Super at different levels of irrigation for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Sannhemp. (c) Nil. (ii) (a) Calcareous sandy loam. (b) N.A. (iii) 9.3.1957. (iv) (a) Disc plough once, disc harrow twice, cultivator twice and *hinga* 6 times. (b) Flat planting. (c) 65 mds /ac. (d) Rows 3′ apart. (e) —. (v) Sannhemp grown and buried at site. (vi) BO—17. (vii) As per treatments. (viii) 4 interculturing operations with tractor. (ix) 22.0″. (x) 18.1.1958.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 57(114) on page 828.

4. GENERAL :

(i) N.A. (ii) Termite attack. (iii) No. of mature stalks and cane yield. (iv) (a) 1957—1959. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 4.99 tons/ac. (ii) (a) 1.05 tons/ac. (b) 0.84 tons/ac. (iii) Main effect of I is significant and main effect of M is highly significant. (iv) Av. yield of cane in tons/ac.

	M_0	M_1	M_2	M_3	M_4	Mean
I_0	1.47	2.94	2.20	3.67	3.30	2.72
I_1	4.40	8.81	8.07	7.34	8.44	7.41
I_2	2.57	4.77	7.34	6.24	6.24	5.43
I_3	1.84	4.77	5.14	4.77	5.51	4.41
Mean	2.57	5.32	5.69	5.51	5.87	4.99

S.E. of difference of two

1. I marginal means = 0.33 tons/ac.
2. M marginal means = 0.30 tons/ac.
3. M means at the same level of I = 0.60 tons/ac.
4. I means at the same level of M = 0.63 tons/ac.'

Crop :- Sugarcane. **Ref :- Bh. 58(106).**

Site :- Zonal Centre, Pachrukhi. **Type :- 'IM'.**

Object :—To find out the optimum dose of A/S in combination with Super at different levels of irrigation for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) G.M. crop—Sugacrane. (b) *Sanai*. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 6.11.1958. (iv) (a) 4 ploughings each followed by *hinga*. (b) Flat method. (c) 65 mds/ac. (d) Row to row 3′. (e) Nil. (v) G.M. with *sanai*. (vi) BO—17. (vii) As per treatments. (viii) Interculturing and weeding. (ix) N.A. (x) 9 to 17.1.1960.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 57(114) on page 828.

4. GENERAL :

(i) Good. (ii) Borer attack. (iii) Tillers, height, mature stalks and cane yield. (iv) (a) 1957-1959. (b) No. (c) Nil. (v) (a) and (b) Harinagar and Narkatiaganj. (vi) and (vii) Nil.

5. RESULTS :

(i) 27.81 tons/ac. (ii) (a) 5.6 tons/ac. (b) 5.05 tons/ac. (iii) All the effects are highly significant. (iv) Av. yield of cane in tons/ac..

	M_0	M_1	M_2	M_3	M_4	Mean
I_0	14.73	23.44	28.32	27.33	26.19	24.00
I_1	15.17	27.07	31.63	27.55	27.00	25.68
I_2	21.71	32.73	33.76	34.23	28.43	30.17
I_3	31.55	27.11	32.51	31.26	34.53	31.39
Mean	20.79	27.59	31.56	30.09	29.04	27.81

S E. of difference of two

1. I marginal means = 1.77 tons/ac.
2. M marginal means = 1.78 tons/ac.
3. M means at the same level of I = 3.57 tons/uc.
4. I mean at the same level of M = 3.65 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 54(87).**

Site :- Zonal Centre, Pachrukhi. **Type :- 'IM'.**

Object :—To find the optimum dose and time of application of A/S in combination with irrigation for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) G.M. crop—Sugarcane. (b) *Sanai.* (c) Nil. (ii) (a) Sandy loam falling into the intra zonal saline soil group crossing the calcareous zonal soil. (b) N.A. (iii) 27.1.1954. (iv) (a) Furrowing by ridger. (b) N.A. (c) 60 three-budded setts/row. (d) Row to row 3′. (e) —. (v) Nil. (vi) CO—453 (late). (vii) As per treatments. (viii) Hoeing and earthing up. (ix) 28.76″ (x) 5.2.1955.

2. TREATMENTS and 3. DESIGN .

Same as in expt. no. 54(94) on page 827.

4. GENERAL :

(i) and (ii) N.A. (iii) Biometric observations and cane yield. (iv) (a) 1954—N.A. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 17.16 tons/ac. (ii) (a) 3.93 tons/ac. (b) 2.00 tons/ac. (iii) Main effect of T alone is highly significant. (iv) Av. yield of cane in tons/ac.

	N_0	N_1	N_2	Mean	T_1	T_2
I_0	16.58	16.12	18.07	16.92	15.96	17.89
I_1	17.42	17.30	17.49	17 40	16.94	17.86
Mean	17.00	16.71	17.78	17.16	16.45	17.87
T_1	—	15.82	16.91			
T_2	—	17.60	18.65			

S.E. of difference of two:

1. I marginal means = 0.93 tons/ac.
2. N marginal means = 0.58 tons/ac.
3. T marginal means of I×T table = 0.47 tons/ac.
4. N means at the same level of I = 0.82 tons/ac.
5. I means at the same level of N = 1.14 tons/ac.
6. T means at the same level of I = 0 67 tons/ac.
7. I means at the same level of T = 1.04 tons/ac.

S.E. of body of N×T table = 0.58 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 57(241).**

Site :- Zonal Centre, Parsa. **Type :- 'IM'.**

Object :—To find out the optimum dose of A/S in combination with Super at different levels of irrigation for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Clayey loam. (b) N.A. (iii) N.A. (iv) (a) 4 ploughings. (b) Flat method. (c) 55 mds./ac. (d) Row to row 3′. (e) —. (v) Nil. (vi) BO - 14. (vii) As per treatments. (viii) Weeding, interculturing and earthing up. (ix) and (x) N.A.

2. TREATMENTS :

Same as in expt. no. 57(114) on page 828.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/replication ; 5 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) One row on either side along length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Cane yield. (iv) (a) to (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 20.66 tons/ac. (ii) (a) 2.86 tons/ac. (b) 2.23 tons/ac. (iii) Main effect of M and interaction M×I are significant. (iv) Av. yield of cane in tons/ac.

	M_0	M_1	M_2	M_3	M_4	Mean
I_0	16.53	22.33	24.39	21.64	20.53	21.08
I_1	22.99	23.44	25.90	25.35	21.78	23.89
I_2	20.13	27.14	26.45	22.88	18.88	23.10
I_3	21.78	23.69	22.88	23.44	21.08	22 57
Mean	20.36	24.15	24.91	23.33	20.57	20.66

S.E. of difference of two

1. I marginal means = 0.90 tons/ac.
2. M marginal means = 0.79 tons/ac.
3. M means at the same level of I = 1.57 tons/ac.
4. I means at the same level of M = 1.67 tons/ac.

———

Crop :- Sugarcane. **Ref :- Bh. 54(86).**

Site :- Zonal Centre, Parsa. **Type :- 'IM'.**

Object :—To find out the dose and time of application of A/S in combination with irrigation for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Sugarcane. (c) Nil. (ii) (a) Sandy. (b) N.A. (iii) 19.2.1954. (iv) (a) One tractor ploughing by 2-3-light harrowing and subsequent planting. (b) to (e) N.A. (v) G.M. (vi) BO—21. (vii) As per treatments. (viii) Flat planting, one interculture every month till earthing, one weeding and one earthing. (ix) 91.71". (x) 9 to 13.1.1955.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(94) on page 827.

4. GENERAL :

(i) Satisfactory. (ii) Stray cases of red-rot, affected plants removed. (iii) Biometric observations and cane yield. (iv) (a) 19 4—N.A. (b) and (c) No. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 16.87 tons/ac. (ii) (a) 3.05 tons/ac. (b) 3.67 tons/ac. (iii) Main effect of I alone is significant. (iv) Av. yield of cane in tons/ac.

	N_0	N_1	N_2	Mean	T_1	T_2
I_0	15.53	15.31	15.54	15.46	16.18	14.74
I_1	19.33	17.67	17.84	18.28	18.88	17.68
Mean	17.43	16.49	16.69	16.87	17.53	16.21
T_1	—	17.50	17.44			
T_2	—	15.48	15.94			

S.E. of difference of two

1. I marginal means = 0.72 tons/ac.
2. N marginal means = 1.06 tons/ac.
3. T marginal means of I×T table = 0.87 tons/ac.
4. N means at the same level of I = 1.50 tons/ac.
5. I means at the same level of N = 1.42 tons/ac.
6. T means at the same level of I = 1.22 tons/ac.
7. I means at the same level of T = 1.13 tons/ac.

S.E. of body of N×T table = 1.06 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 55(246).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'IM'.**

Object :—To find out the optimum dose of A/S in combination with Super at different levels of irrigation for Sugarcane.

1. BASAL CONDITIONS :

(i) Nil. (b) and (c) N.A. (ii) (a) Clay loam. (b) Refer soil analysis, Pusa. (iii) 17.12.1955. (iv) (a) Ploughing by tractor once and by *desi* plough twice. (b) Flat method of planting. (c) 40 three-budded setts/row. (d) Row 3′ apart. (e) —. (v) Nil. (vi) CO—419. (vii) As per treatments. (viii) 2 weedings and one hoeing. (ix) 58.46″. (x) 4.2.1957.

2. TREATMENTS and 3. DESIGN :

Same as in expt no. 57(114) on page 828.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Cane yield and no. of mature stalks. (iv) and (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 19.66 tons/ac. (ii) (a) 5.08 tons/ac. (b) 3.66 tons/ac. (iii) Main effect of M alone is significant. (iv) Av. yield of cane in tons/ac.

	M_0	M_1	M_2	M_3	M_4	Mean
I_0	17.30	18.66	21.38	18.29	18.84	18.89
I_1	17.19	20.39	20.46	18.44	18.44	18.98
I_2	17.41	21.78	22.92	19.58	19.91	20.32
I_3	17.74	21.89	20.83	22.59	19.25	20.46
Mean	17.41	20.68	21.40	19.73	19.11	19.66

S.E. of difference of two

1. I marginal means = 1.61 tons/ac.
2. M marginal means = 1.29 tons/ac.
3. M means at the same level of I = 2.59 tons/ac.
4. I means at the same level of M = 2.82 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 56(131).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'IM'.**

Object :—To find out the optimum dose of A/S in combination with super at different levels of irrigation for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) *Arhar* and Goundnut. (c) Nil. (ii) (a) Light loam. (b) Refer soil analysis, Pusa. (iii) 21 to 24.1. 1956. (iv) (a) One mould board ploughing and 4 ploughings by *desi* plough. (b) Flat planting. (c) 60 mds./ac. (d) Rows 3′ apart. (e) —. (v) Nil. (vi) CO—419. (vii) As per treatments. (viii) 5 interculturings with 5-tyred Bihar cultivator earthing in last week of June. (ix) 59.46″. (x) 2.2.1957.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 57(114) on page 828.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Tiller count, no. of mature stalks, sucrose % and cane yield. (iv) and (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 22.38 tons/ac. (ii) (a) 3.53 tons/ac. (b) 1.77 tons/ac. (iii) Main effect of M alone is highly significant. (iv) Av. yield of cane in tons/ac.

	M_0	M_1	M_2	M_3	M_4	Mean
I_0	18.62	23.07	22.22	19.54	25.97	21.88
I_1	23.51	24.68	24.24	21.89	25.75	24.01
I_2	16.68	18.59	25.35	20.35	22.88	20.77
I_3	20.09	21.19	24.10	22.55	26.37	22.86
Mean	19.73	21.88	23.98	21.08	25.24	22.38

S.E. of difference of two

1. I marginal means = 1.12 tons/ac.
2. M marginal means = 0.63 tons/ac.
3. M means at the same level of I = 1.25 tons/ae.
4. I means at the same level of M = 1.58 tons/ac.

Crop :- Sugarcane. *(Ratoon).* **Ref :- Bh. 56(240).**

Site :- Sngarcane Res. Stn., Pusa. **Type :- 'IM'.**

Object :—To study the effect of different doses of manures and irrigation on the yield of ratoon crop of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Sannhemp. (c) Nil. (ii) (a) Light loam. (b) Refer soil analysis, Pusa. (iii) 24.2.1956 (plant crop). (iv) (a) 3 ploughings by *desi* plough. (b) Flat method. (c) 40 three-budded setts/row. (d) Rows 3′ apart. (e) —. (iv) Nil. (vi) CO—419. (vii) As per treatments. (viii) 1 hoeing and 2 weedings in 1st year. (ix) 86.58″. (x) 11.1.1958.

2. TREATMENTS and 3. DESIGN :

Same as in expt no. 57(114) on page 828.

4. GENERAL :

(i) Very poor. (ii) Nil. (iii) Cane yield and no. of mature stalks. (iv) (a) to (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 4.94 tons/ac. (ii) (a) 1.34 tons/ac. (b) 1.34 tons/ac. (iii) No effect is significant. (iv) Av. yield of cane in tons/ac.

	M_0	M_1	M_2	M_3	M_4	Mean
I_0	4.66	5.76	6.45	5.76	4.26	5.38
I_1	5.36	5.65	5.21	5.51	4.26	5.20
I_2	3.16	4.95	4.40	3.30	4.95	4.15
I_3	5.36	5.98	4.55	4.26	4.95	5.02
Mean	4.64	5.59	5.15	4.71	4.61	4.94

S.E. of difference of two

1. I marginal means = 0.42 tons/ac.
2. M marginal means = 0.47 tons/ac.
3. M means at the same level of I = 0.95 tons/ac.
4. I means at the same level of M = 0.95 tons/ac.

Crop :- Sugarcane. *(Ratoon).* **Ref :- Bh. 56(239).**

Site :- Sugarcane. Res. Stn., Pusa. **Type :- 'IM'.**

Object :—To find out the optimum dose of A/S in combination with Super at different levels of irrigation for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) and (b) Nil. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) Refer soil analysis, Pusa. (iv) (a) One tractor ploughing and 2 *desi* ploughings. (b) Flat method. (c) 40 three-budded setts/row. (d) Rows 3′ apart. (e) – . (v) Nil. (vii) As per treatments. (viii) 2 weedings and 1 hoeing. (ix) N.A. (x) 22, 24.2.1958.

2. TREATMENTS and 3. DESIGN :

Same as in expt no. 57 (114) on page 828.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Cane yield. (iv) (a) to (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 32.80 tons/ac. (ii) (a) 5.34 tons/ac. (b)4.92 tons/ac. (iii) No effect is significant. (iv) Av. yield of cane in tons/ac.

	M_0	M_1	M_2	M_3	M_4	Mean
I_0	27.08	30.61	30.28	33.65	31.89	30.70
I_1	31.16	31.27	35.34	35.23	33.95	33.39
I_2	30.64	34.94	35.49	32.88	29.84	32.76
I_3	32.44	31.27	37.21	32.81	37.98	34.34
Mean	30.33	32.02	34.58	33.64	33.42	32.80

S.E. of difference of two

1. I marginal means = 1.69 tons/ac.
2. M marginal means = 1.74 tons/ac.
3. M means at the same level of I = 3.48 tons/ac.
4. I means at the same level of M = 3.54 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 57(74).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'IM'.**

Object :—To find out the optimum dose of A/S in combination with Super, at different levels of irrigation for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) G.M.—Sugarcane—G.M.—Wheat. (b) *Sanai.* (c) Nil. (ii) (a) Light loam. (b) Refer soil analysis, Pusa. (iii) 11.2.1957. (iv) (a) One mould board plough followed by disc harrowing. (b) Flat method. (c) 60 mds./ac. (d) Row to row 3′. (e) —. (v) G.M. applied. (vi) CO—419. (vii) As per treatments. (viii) 5 interculturings with 5-tyned Bihar cultivator and earthing up in last week of June. (ix) 30.17″. (x) 23.2.1958.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 57(114) on page 828.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Cane yield, no. of mature stalks and sucrose content. (iv) (v) 1955—contd. (b) No. (c) Nil. (v) (a) Harinagar, Narkatiaganj. Parsa, Majhaulia, Motihari, Motipur, Pachrukhi, Warisaliganj., Jineswargarh, and Sepaya. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 22.45 tons/ac. (ii) (a) 2.89 tons/ac. (b) 4.44 tons/ac. (iii) Main effect of M alone is highly significant. (iv) Av. yield of cane in tons/ac.

	M_0	M_1	M_2	M_3	M_4	Mean
I_0	15.28	25.20	23.07	25.09	28.50	23.43
I_1	11.79	17.89	22.81	23.44	30.67	21.32
I_2	15.13	23.18	22.22	24.17	24.94	21.93
I_3	15.68	21.12	22.81	28.83	27.14	23.12
Mean	14.47	21.85	22.73	25.38	27.81	22.45

S.E. of difference of two
1. I marginal means = 0.92 tons/ac.
2. M marginal means = 1.57 tons/ac.
3. M means at the same level of I = 3.14 tons/ac.
4. I means at the same level of M = 2.96 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 58(298).**
Site :- Sugarcane Res. Stn., Pusa. **Type :- 'IM'.**

Object :—To find out the optimum doses of A/S in combinations with Super at different levels of irrigation for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Pusa. (iii) 31.1.1958. (iv) (a) 2 ploughings by *desi* plough. (b) Flat method. (c) 40 three-budded setts/row. (d) Rows 3′ apart. (e) —. (v) Nil. (vi) CO—419. (vii) As per treatments. (viii) 1 hand weeding and one earthing. (ix) 46.75″. (x) 19.2.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 57(114) on page 828.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Cane yield and no. of mature stalks. (iv) (a) to (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 32.80 tons/ac. (ii) (a) 5.97 tons/ac. (b) 1.23 tons/ac. (iii) None of the effects is significant. (iv) Av. yield of cane in tons/ac.

	M_0	M_1	M_2	M_3	M_4	Mean
I_0	27.08	30.61	30.28	33.65	31.89	30.70
I_1	31.16	31.27	35.34	35.23	33.95	33.39
I_2	30.64	34.94	35.49	32.88	29.84	32.76
I_3	32.44	31.27	37.21	32.81	37.98	34.34
Mean	30.33	32.02	34.58	33.64	33.42	32.80

S.E. of difference of two

1. I marginal means = 1.89 tons/ac.
2. M marginal means = 0.45 tons/ac.
3. M means at the same level of I = 0.87 tons/ac.
4. I means at the same level of M = 2.04 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 55(155).**

Site :- Sugarcane. Res. Sub. Stn., Sepaya. **Type :- 'IM'.**

Object :—To find out the dose and time of application of A/S in combination with irrigation for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Moong* and *Kalai*. (c) Nil. (ii) (a) Sandy soil full of alkali patches. (b) N.A. (iii) 28.2.1955 and 1.3.1955. (iv) (a) Ploughing two by *desi* ploughs preceded by one tractor ploughing. (b) N.A. (c) 60 three-budded setts/row. (d) Row to row 3′. (e) Nil. (v) Nil. (vi) BO—11 (early). (vii) As per treatments. (viii) Interculturings. (ix) 47.07″. (x) 8, 9.2.1956.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(94) on page 827.

4. GENERAL :

(i) Poor; lodged. (ii) Red streaks and borer attack—control measures N.A. (iii) Biometric observations and cane yield. (iv) (a) 1955—N.A. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 4.89 tons/ac. (ii) (a) 3.81 tons/ac. (b) 1.98 tons/ac. (iii) No effect is significant. (iv) Av. yield of cane in tons/ac.

	N_0	N_1	N_2	Mean	T_1	T_2
I_0	4.55	4.33	5.95	4.94	4.96	4.93
I_1	4.67	4.67	5.15	4.83	4.33	5.34
Mean	4.61	4.50	5.55	4.89	4.65	5.14
T_1	—	4.13	5.34			
T_2	—	4.87	5.77			

S.E. of difference of two

1. I marginal means = 0.90 tons/ac.
2. N marginal means = 0.57 tons/ac.
3. T marginal means = 0.47 tons/ac.
4. N means at the same level of I = 0.81 tons/ac.
5. I means at the same level of N = 0.66 tons/ac.
6. T means at the same level of I = 1.11 tons/ac.
7. I means at the same level of T = 1.01 tons/ac.

S.E. of body of N×T table = 0.57 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 57(90)**

Site :- Sugarcane Res. Sub-Stn., Sepaya. **Type :- 'IM'.**

Object :—To find out the optimum dose of A/S in combination with Super at different levels of irrigation for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Soyabean. (c) N.A. (ii) Sandy loam with alkaline patches. (b) N.A. (iii) 15.3.1957 (iv) (a) Twice ploughed by Bihar plough. (b) Flat planting. (c) 60 mds/ac. (d) Rows 3′ apart. (e) —. (v) Nil. (vi) BO—21. (vii) As per treatments. (viii) 4 interculturing operations. (ix) 34.22″. (x) 22 to 25.3.1958.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 57(114) on page 828.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of cane, no of tillers and mature stalks and sucrose %. (iv) (a) 1957—1958. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 16.98 tons/ac. (ii) (a) 4.04 tons/ac. (b) 2.09 tons/ac. (iii) None of the effects is significant. (iv) Av. yield of cane in tons/ac.

	M_0	M_1	M_2	M_3	M_4	Mean
I_0	13.99	16.68	15.79	15.50	15.79	15.55
I_1	16.82	20.09	17.52	18.59	19.69	18.54
I_2	18.11	19.84	15.90	17.37	17.74	17.79
I_3	15.61	18.77	17.04	14.40	14.40	16.04
Mean	16.13	18.85	16.56	16.47	16.91	16.98

S.E. of difference of two :

1. I marginal means = 1.28 tons/ac.
2. M marginal means = 0.74 tons/ac.
3. M means at the same level of I = 1.48 tons/ac.
4. I means at the same level of M = 1.84 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 58(56).**

Site :- Sugarcane Res. Sub-Stn., Sepaya. **Type :- 'IM'.**

Object :—To find out the optimum dose of A/S in combination with Super at different levels of irrigation.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai*. (c) 50 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy loam to clayey with alkaline patches. (b) N.A. (iii) 6, 7 and 12.2.1958. (iv) (a) 4 ploughings by *desi* plough. (b) Flat planting. (c) 60 mds./ac. (d) Rows 3′ apart. (e) Nil. (v) G.M. buried at site. (vi) BO—17. (vii) As per treatments. (viii) Weeding, interculturing and earthing once. (ix) 51.63″. (x) 23 to 28.3.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 57(114) on page 828.

4. GENERAL :

(i) Good. (ii) Attack of stem borers and termites—no control measures taken. (iii) No. of tillers, no. of mature stalk, sucrose % and cane yield. (iv) (a) 1957—1958. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 19.03 tons/ac. (ii) (a) 2.91 tons/ac. (b) 2.27 tons/ac. (iii) None of the effects is significant. (iv) Av. yield of cane in tons/ac.

	M_0	M_1	M_2	M_3	M_4	Mean
I_0	16.60	22.48	24.13	18.99	16.46	19.73
I_1	18.07	22.52	22.41	21.56	18.59	20.63
I_2	15.98	20.79	22.22	21.82	16.68	19.50
I_3	15.42	20.35	20.60	21.71	16.48	18.91
Mean	16.52	21.54	22.34	21.02	1.705	19.03

S.E. of difference of two

1. I marginal means = 0.92 tons/ac.
2. M marginal means = 0.80 tons/ac.
3. M means at the same level of I = 1.61 tons/ac.
4. I means at the same level of M = 1.71 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 57(86).**

Site :- Zonal Centre, Warisaliganj. **Type :- 'IM'.**

Object :—To find out the optimum dose of A/S in combination with Super at different levels of irrigation for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) Nil. (ii) (a) Sandy loam with alkaline patches. (b) N.A. (iii) 19 to 22.2.1957. (iv) (a) *Sanai* buried by tractor ploughing followed by 3 ploughings by *desi* plough. (b) Flat planting. (c) 60 mds./ac. (d) Rows 3′ apart. (e) —. (v) *Sanai* buried as manure. (vi) CO—419 (late). (vii) As per treatments. (viii) 4 interculturing operations. (ix) 28.9″. (x) 31.1.1958 to 10.2.1958.

2. TREATMENTS :

Main-plot treatments :

4 levels of irrigations : $I_1=3$, $I_2=6$, $I_3=9$ and $I_4=12$ irrigations.

Sub-plot treatments :

5 manurial treatments : M_0=Control, M_1=80 lb./ac. of N as A/S+60 lb./ac. of P_2O_5 as Super, M_2=2 times in M_1, M_3=3 times in M_1 and M_4=4 times in M_1.

3. DESIGN :

Same as in expt. no. 57(114) on page 828.

4. GENERAL :

(i) Lodged in some plots in 1st week of Sept. (ii) Pyrilla and white ant incident, Endrine sprayed. (iii) No. of tillers and no. of mature stalks, sucrose % and cane yield. (iv) (a) 1957—N.A. (b) No. (c) Nil. (v) (a) Parsa and Harinagar. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 31.17 tons/ac. (ii) (a) 10.73 tons/ac. (b) 6.39 tons/ac. (iii) None of the effects is significant. (iv) Av. yield of cane in tons/ac.

	M_0	M_1	M_2	M_3	M_4	Mean
I_0	30.89	30.01	30.01	21.52	20.97	26.68
I_1	33.10	34.97	36.81	34.60	28.06	33.51
I_2	36.47	29.06	33.61	28.94	30.38	31.69
I_3	30.85	33.83	35.34	29.53	34.49	32.81
Mean	32.83	31.97	33.94	28.65	28.48	31.17

S.E. of difference of two

1. I marginal means = 3.39 tons/ac.
2. M marginal means = 2.26 tons/ac.
3. M means at the same level of I = 4.52 tons/ac.
4. I means at the same level of M = 5.28 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 54(28).**

Site :- Sugarcane Zonal Centre, Warisaliganj. **Type :- 'IM'.**

Object :—To find out the dose and time of application of A/S in combination with irrigation for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—*Sanai*. (b) *Sanai*. (c) Nil. (ii) (a) Sandy loam with scattered alkali patches. (b) N.A. (iii) 11 to 17.3.1954. (iv) (a) Four ploughings with tractor cultivator followed by *hinga*. (b) N.A. (c) 60 three-budded setts/row. (d) Row to row 3′. (e) Nil. (v) G.M. with *sanai*. (vi) CO—419 (late). (vii) As per treatments. (viii) Weeding and earthing. (ix) 23.56″. (x) 25.2.1955 to 10.3.1955.

2. TREATMENTS :

Main-plot treatments :

2 levels of irrigation : $I_1=3$ and $I_2=6$ irrigations.

Sub-plot treatments :

All combinations of (1) and (2)

(1) 3 levels of N as A/S : $N_0=0$, $N_1=40$ and $N_2=80$ lb./ac.

(2) 2 times of application of N : T_1=Full dose at planting and $T_2=\frac{1}{2}$ at planting+$\frac{1}{2}$ at earthing.

3. DESIGN :

Same as in expt. no. 54(94) on page 827.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Germination count, tiller count, height measurement, mature stalk count and cane yield. (iv) (a) 1954—1956. (b) No. (c) Nil. (v) (a) Other zonal centres. (b) Nil. (vi) Nil. (vii) Abnormally low yield due to alkali patches in some plots.

5. RESULTS :

(i) 33.29 tons/ac. (ii) (a) 9.44 tons/ac. (b) 5.72 tons/ac. (iii) No effect in significant. (iv) Av. yield of cane in tons/ac.

	N_0	N_1	N_2	Mean	T_1	T_2
I_1	30.69	30.84	36.17	32.57	32.32	32.82
I_2	33.14	34.11	34.80	34.02	32.64	35.39
Mean	31.92	32.48	35.48	33.29	32.48	34.10
T_1	—	32.08	34.10			
T_2	—	32.88	36.87			

S.E. of difference of two

1. I marginal means = 2.73 tons/ac.
2. N marginal means = 2.02 tons/ac.
3. T marginal means of I×T table = 1.65 tons/ac.
4. N means at the same levels of I = 2.86 tons/ac.
5. I means at the same level of N = 3.59 tons/ac.
6. I means at the same level of I = 2.34 tons/ac.
7. I means at the same level of T = 3.19 tons/ac.

S.E. of body of N×T table = 2.02 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 55(100).**

Site :- Sugarcane Zonal Centre, Warisaliganj. **Type :- 'IM'.**

Object :—To find out the dose and time of application of A/S in combination with irrigation.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—*Sanai*—Sugarcane. (b) *Sanai*. (c) Nil. (ii) (a) Sandy loam with scattered alkaline patches. (b) N.A. 12 to 17.1.1955. (iv) (a) 4 ploughings with tractor cultivator followed by *hinga*. (b) N.A. (c) 60 three-budded setts/row. (d) Row to row 3′. (e) Nil. (v) G.M. with *sanai*. (vi) CO—419 (late). (vii) As per treatments. (viii) Weeding twice and earthing once. (ix) 40.53″. (x) 24.2.1956.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(28) on page 839.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Biometric observations and cane yield. (iv) (a) 1954—1956. (b) No. (c) Nil. (v) (a) All zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 30.79 tons/ac. (ii) (a) 25.66 ton/ac. (b) 9.33 tons/ac. (iii) N×T interaction alone is significant. (iv) Av. yield of cane in tons/ac.

	N_0	N_1	N_2	Mean	T_1	T_2
I_1	30.98	27.38	31.82	30.06	26.80	33.32
I_2	37.02	24.74	32.80	31.52	32.40	30.64
Mean	34.00	26.06	32.31	30.79	29.60	31.98
T_1	—	19.08	33.03			
T_2	—	33.04	31.58			

S.E. of difference of two

1. I marginal means = 7.42 tons/ac.
2. N marginal means = 3.30 tons/ac.
3. T marginal means = 2.69 tons/ac.
4. N means at the same level of I = 4.67 tons/ac.
5. I means at the same level of N = 8.33 tons/ac.
6. T means at the same level of I = 3.81 tons/ac.
7. I means at the same level of T = 7.90 tons/ac.

S.E. of body of N×T table = 3.30 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 56(3).**

Site :- Zonal Centre, Warisaliganj. **Type :- 'IM'.**

Object :—To find out the dose and time of application of A/S in combination with irrigation for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—*Sanai*—Sugarcane. (b) *Sanai.* (c) Nil. (ii) (a) Sandy loam with scattered alkaline patches. (b) N.A. (iii) 19 to 22.2.1956. (iv) (a) 4 ploughings with tractor cultivator followed by *hinga.* (b) N.A. (c) 64 three-budded setts/row. (d) Row to row distance 3′. (e)—. (v) G.M. with *Sanai.* (vi) CO—419 (late). (vii) Irrigated as per treatments. (viii) Two weedings and 1 earthing. (ix) 44.06″. (x) 27.1.1957 to 5.2.1957.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(28) on page 839.

4. GENERAL :

(i) Satisfactory ; lodging on 2.8.1956 and 13.9.1956. (ii) Nil. (iii) Biometric observations and cane yield. (iv) (a) 1954—1956. (b) No. (c) Nil. (v) (a) All zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 36.24 tons/ac. (ii) (a) 17.94 tons/ac. (b) 8.87 tons/ac. (iii) No effect is significant. (iv) Av. yield of cane in tons/ac.

	N_0	N_1	N_2	Mean	T_1	T_2
I_1	32.27	36.50	38.48	35.75	35.38	36.12
I_2	37.97	31.77	40.45	36.73	35.20	38.26
Mean	35.12	34.14	39.46	36.24	35.29	37.19
T_1	—	32.60	38.84			
T_2	—	35.68	40.08			

S.E. of difference of two

1. I marginal means = 5.18 tons/ac.
2. N marginal means = 3.14 tons/ac.
3. T marginal means = 2.56 tons/ac.
4. N means at the same level of I = 4.44 tons/ac.
5. I means at the same level of N = 6.32 tons/ac.
6. T means at the same level of I = 3.62 tons/ac.
7. I means at the same level of T = 5.76 tons/ac.

S.E. of body of N×T table = 3.14 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 59(205).**

Site :- Agri. Res. Instt., Patna. **Type :- 'IMV'.**

Object : – To study the response of different varieties of Sugarcane to manures and irrigations.

1. BASAL CONDITIONS :

(i) (a) Paddy—Sugarcane—Paddy. (b) Paddy. (c) N.A. (ii) (a) Clay. (b) Refer soil analysis, Patna. (iii) 21 to 26.2.1959. (iv) (a) One tractor ploughing with mould board plough and one disc ploughing. (b) Flat method of planting. (c) 64 three-budded setts/row. (d) Rows 3′ apart. (e) Nil. (v) Nil. (vi) and (vii) As per treatments. (viii) Hoeing after each irrigation. (ix) 43.53″. (x) 5 to 8.3.1960.

2. TREATMENTS :

Main-plot treatments :

All combinations of (1) and (2)

(1) 3 levels of irrigation : $I_1=2$, $I_2=4$ and $I_3=6$ irrigations.

(2) 3 levels of manures : M_0=Control, M_1=80 lb./ac. of N as A/S+60 lb./ac. of P_2O_5 as Super and M_2=2 times M_1.

Sub-plot treatments :

3 varieties : V_1=BO.—17, V_2=BO—29 and V_3=BO—32.

3. DESIGN :

(i) Split-plot. (ii) (a) 9 main-plots/block ; 3 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a) 70.5′×21′. (b) 70.5′×15′. (v) One row on either side. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Attack of stem-borer—no control measures taken. (iii) Cane yield and no. of mature stalks. (iv) (a) to (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 15.88 tons/ac. (ii) (a) 3.40 tons/ac. (b) 1.57 tons/ac. (iii) Main effect of V alone is highly significant. (iv) Av. yield of cane in tons/ac.

	M_0	M_1	M_2	Mean	V_1	V_2	V_3
I_1	14.68	16.70	15.41	15.60	16.88	14.42	15.50
I_2	16.40	15.75	15.88	16.01	16.60	15.39	16.04
I_3	15.34	17.27	15.43	16.01	17.28	14.95	15.80
Mean	15.47	16.57	15.57	15.87	16.92	14.92	15.78
V_1	16.03	17.94	16.70				
V_2	15.07	15.67	14.02				
V_3	15.31	16.10	15.93				

S.E. of difference of two

1. I or M marginal means = 0.93 tons/ac.
2. V marginal means = 0.43 tons/ac.
3. V means at the same level of I or M = 0.74 tons/ac.
4. I or M means at the same level of V = 1.11 tons/ac.

S.E. of body of I×M table = 1.13 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 59(26).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'IMV'.**

Object :—To study the response of Sugarcane varieties to manures and irrigations.

1. BASAL CONDITIONS :

(i) (a) G.M.—Sugarcane—G.M.—Wheat. (b) *Sanai.* (c) Nil. (ii) (a) Light loam. (b) Refer soil analysis, Pusa. (iii) 4,5,6.3.1959. (iv) (a) 1 ploughing by mould board followed by discing, harrowing and planking. (b) Flat method. (c) 60 mds/ac. (d) Row to row 3′ (e) Nil. (v) G.M. with *sanai.* (vi) As per treatments. (vii) As per treatments. (viii) 5 interculturings with 5-tyred Bihar cultivator, earthing up in June. (ix) 43.45″. (x) 2 to 18.3.1960.

2. TREATMENTS :

Main-plot treatments :
All combinations of (1) and (2)

(1) 3 levels of irrigation : $I_0=0$, $I_1=2$ and $I_2=4$ irrigations.
(2) 3 levels of manure : M_0=Control, M_1=60 lb./ac. of N as A/S+75 lb/ac. of P_2O_5 as Super and M_2=2 times M_1.

Sub-plot treatments :
3 varieties : V_1=BO—17, V_2=BO—29 and V_3=BO—32.

3. DESIGN :

(i) Split-plot. (ii) (a) 9 main-plots/block ; 3 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a) 60.5′×24′ (b) 60.5′×18′. (v) One row on either side. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Cane yield, no. of mature stalks, germination and sucrose content. (iv) (a) 1959—N.A. (b) No. (c) Nil. (v) (a) to (vii) Nil.

5. RESULTS :

(i) 18.73 tons/ac. (ii) (a) 4.05 tons/ac. (b) 2.75 tons/ac. (iii) Main effects of I, M and V are significant. (iv) Av. yield of cane in tons/ac.

	M_0	M_1	M_2	Mean	V_1	V_2	V_3
I_0	15.93	16.74	17.92	16.86	15.52	16.50	18.56
I_1	17.24	18.14	20.67	18.68	18.15	18.00	19.89
I_2	17.59	21.23	23 09	20.64	19.16	21.29	21.47
Mean	16.92	18.70	20.56	18.73	17.61	18.60	19.97
V_1	15.46	17.43	19.94				
V_2	16.70	18.97	20.13				
V_3	18.60	19.70	21.61				

S.E. of difference of two

1.	I or M marginal means	= 1.10 tons/ac.
2.	V marginal means	= 0.75 tons/ac.
3.	V means at the same level of I or M	= 1.30 tons/ac.
4.	I or M means at the same level of V	= 1.53 tons/ac.
	S.E. of body of I×M table	= 1.35 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 54(89).**

Site :- Zonal Centre, Pachrukhi. **Type :- 'ICM'.**

Object :—To find out the optimum spacing and dose of N in combination with irrigation for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) G.M. crop—Sugarcane. (b) *Sanai.* (c) Nil. (ii) (a) Sandy loam falling into the interzonal saline soil group crossing the calcareous zonal soil. (b) N.A. (iii) 2.2.1954. (iv) (a) Furrowing by ridger. (b) Planting in furrows. (c) 28 three-budded setts/row. (d) As per treatments. (e) Nil. (v) Nil. (vi) CO—453. (late.) (vii) As per treatments. (viii) N.A. (ix) 29.26″. (x) 18.2.1955.

2. TREATMENTS :

Main-plot treatments :

Strips in one direction—2 levels of irrigation : $I_1=2$ and $I_2=4$ irrigations.

Strips in perpendicular direction—3 spacings : $S_1=2'$, $S_2=3'$ and $S_3=4'$ between rows.

Sub-plot treatments :

3 levels of N as A/S : $N_1=40$, $N_2=80$ and $N_3=120$ lb./ac.

3. DESIGN :

(i) Split-cum-strip-plot. (ii) (a) 6 main-plots (strip combinations)/block ; 3 sub-plots/main-plot. (b) N.A. (iii) 4 . (iv) (a) $24'\times 64'$ for S_1, $24'\times 66'$ for S_2 $24'\times 68'$ for S_3. (b) $24'\times 60'$. (v) 1 row either side breadth-wise. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) N.A. (iii) Germination count, tiller count, height measurement, mature stalk count and yield of cane. (iv) (a) No. (b) and (c) — (v) (a) Other zonal centres. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(*i*) 33.72 tons/ac. (ii) (a) 2.63 tons/ac. (for I). (b) 3.28 tons/ac. (for S). (c) 4.71 tons/ac. (for I×S). (d) 2.02 tons/ac. (for N). (iii) No effect is significant. (iv) Av. yield of cane in tons/ac.

	N_1	N_2	N_3	Mean	S_1	S_2	S_3
I_1	33.63	34.05	34.33	34.00	34.68	33.82	33.50
I_2	32.62	33.31	34.39	33.44	33.70	32.28	34.35
Mean	33.13	33.68	34.36	33.72	34.19	33.05	33.93
S_1	33.19	35.01	34.37				
S_2	32.50	32.75	33.91				
S_3	33.70	33.29	34.81				

S.E of difference of two

1. I marginal means = 0.62 tons/ac.
2. S marginal means = 1.95 tons/ac.
3. N marginal means = 0.58 tons/ac.
4. I means at the same levels of S = 1.69 tons/ac.
5. S means at the same level of I = 1.66 tons/ac.
6. I means at the same level of N = 0.92 tons/ac.
7. N means at the same level of I = 0.82 tons/ac.
8. S means at the same level of N = 1.25 tons/ac.
9. N means at the same level of S = 0.82 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 54(148).**

Site :- Agri. Res. Instt., Patna. **Type :- 'ICM'.**

Object :—To study the effect of time of planting and irrigation in combination with manure on the yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) Nil. (ii) (a) Clay. (b) Refer soil analysis, Patna. (iii) As per treatments. (iv) (a) One tractor ploughing and ploughing with mould board and disc plough before planting. (b) Flat method of planting. (c) 60 three-budded setts/row. (d) Rows 3′ apart. (e) Nil. (v) G.M. with *sanai.* (vi) CO—453 (late). (vii) As per treatments. (viii) Hoeing after each irrigation and earthing before monsoon. (ix) 36.45″. (x) 25 to 27.2.1955.

2. TREATMENTS :

Main-plot treatments :

All combinations of (1) and (2).

(1) 3 intervals of irrigation : $I_1=10$, $I_2=20$ and $I_3=30$ days.

(2) 3 months of planting : M_1=December 1953, M_2=January 1954 and M_3=February 1954.

Sub-plot treatments :

3 levels of N as A/S : $N_0=0$, $N_1=60$ and $N_2=120$ lb./ac.

3. DESIGN :

(i) Split-plot. (ii) (a) 9 main-plots/block; 3 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) 60.5′×24′. (b) 60.5′×18′. (v) 1 row on either side along length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Mild attack of stem borer—no control measures taken. (iii) Cane yield. (iv) and (v) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 18.42 tons/ac. (ii) (a) 6.65 tons/ac. (b) 3.79 tons/ac. (iii) Main effect of N and interaction N×I are highly significant. (iv) Av. yield of cane in tons/ac.

	M_1	M_2	M_3	Mean	N_0	N_1	N_2
I_1	17.22	18.46	20.83	18.84	20.15	18.32	18.06
I_2	18.55	18.06	20.31	18.97	19.60	18.22	19.09
I_3	15.96	17.42	18.95	17.44	20.38	15.76	16.19
Mean	17.24	17.98	20.03	18.42	20.04	17.43	17.78
N_0	17.28	18.31	24.53				
N_1	17.31	17.48	17.50				
N_2	17.13	18.15	18.06				

S.E. of difference of two

1. I or M marginal means = 1.57 tons/ac.
2. N marginal means = 0.89 tons/ac.
3. N means at the same level of I or M = 1.55 tons/ac.
4. I or M means at the same level of N = 2.01 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 59(110).**

Site :- Agri. Res. Instt., Patna. **Type :- 'ICM'.**

Object :—To find out the optimum doses of N and P in combination with irrigation and spacing on Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil (b) *Dhaincha.* (c) N.A. (ii) (a) Clayey. (b) Refer soil analysis, Patna. (iii) 7 to 11.1.1959. (iv) (a) Tractor ploughing with mould board plough and disc plough. Burying of G.M. (b) Flat method. (c) 60 mds/ac. (d) As per treatments. (e) Nil. (v) G.M. with *Dhaincha.* (vi) BO—17 (late). (vii) As per treatments. (viii) Hoeing after each irrigation. (ix) 4.53". (x) 43, 5.2.1960 and 8, 9.3.1960.

2. TREATMENTS :

Main-plot treatments :

2 levels of irrigation : $I_1=2$, and $I_2=4$ irrigations.

Sub-plot treatments :

All combinations of (1) and (2)

(1) 3 spacings : $S_1=3'$, $S_2=3\frac{1}{2}'$ and $S_3=4'$ between rows.

(2) 5 manurial treatments : M_0=Control, M_1=80 lb./ac. of N as A/S+30 lb./ac. of P_2O_5 as Super, M_2=80 lb./ac. of N as A/S+60 lb /ac. of P_2O_5 as Super, M_3=120 lb./ac. of N as A/S+60 lb./ac. of P_2O_5 as Super and M_4=120 lb./ac of N as A/S+90 lb./ac. of P_2O_5 as Super.

3. DESIGN :

(i) Split-plot. (ii) (a) 2 main-plots/block ; 15 sub-plots/main-plot. (b) N.A. (iii) 2. (iv) (a) N.A. (b) $8^{+\prime}\times 16'$. (v) One row on either side along the length. (v) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Germination, tiller count, mature stalks count and cane yield: (iv) (a) 1959—N.A. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 23.57 tons/ac. (ii) (a) 0.28 tons/ac. (b) 1.95 tons/ac. (iii) Main effects of I, M and S are significant. No other effect is significant. (iv) Av. yield of cane in tons/ac.

	M_0	M_1	M_2	M_3	M_4	S_1	S_2	S_3	Mean
I_1	22.07	22.70	23.42	23.43	28.75	24.37	24.65	23.21	24.08
I_2	19.07	23.31	25.40	22.95	24.60	25.97	24.95	18.28	23.07
Mean	20.57	23.01	24.41	23.19	26.68	25.17	24.80	20.75	23.57
S_1	18.86	25.95	25.90	28.25	26.90				
S_2	23.51	20.01	26.24	24.07	30.18				
S_3	19.35	23.06	21.10	17.27	22.95				

S.E. of difference of two

1. I marginal means = 0.07 tons/ac.
2. S marginal means = 0.62 tons/ac.
3. M marginal means = 0.80 tons/ac.
4. S means at the same level of I = 0.88 tons/ac.
5. M means at the same level of I = 1.13 tons./ac.
6. I means at the same level of S = 0.72 tons./ac.
7. I means at the same levels of M = 1.01 tons/ac.

S.E. of the body of M×S table = 1.38 tons/ac.

Crop :- Sugarcane.
Site :- Sugarcane Res. Stn., Pusa.

Ref :- Bh. 54(102).
Type 'ICM'.

Object :—To find out the optimum dose of N in combination with irrigation and spacing.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—Maize—Barley—*Sanai*. (b) *Sanai*. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Pusa. (iii) 4, 5.2.1954. (iv) (a) Harrowing once and mould board ploughing each followed by *hinga*. (b) Furrow planting. (c) 60 three-budded setts/row. (d) As per treatments. (c) Nil. (v) Nil. (vi) CO—419 (late). (vii) As per treatments. (viii) Fortnightly intercultural operation till the end of May. Earthing up in mid-June. (ix) 46.71". (x) 3rd week of Jannary, 1955.

2. TREATMENTS :

Main-plot treatments :

3 levels of irrigation : $I_1=2$, $I_2=4$ and $I_3=6$ irrigations.

Sub-plot treatments :

All combinations of (1) and (2)

1. 3 levels of N as A/S: $N_1=80$, $N_2=120$ and $N_3=160$ lb./ac.
2. 3 spacings between rows : $S_1=3'$, $S_2=4'$ and $S_3=5'$.

3. DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/block ; 9 sub-plots/main-plot. (b) N.A. (iii) 2. (iv) (a) 66'×24' for S_1 68'×24' for S_2 and 70'×24' for S_3. (b) 60'×24'. (v) One row on either side breadth-wise. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Borer incidence noticed—dead hearts removed ; Aldrine was applied at planting and again 3 months after to control termite infection. (iii) Biometric observations and cane yield. (iv) (a) 1949—1954. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 22.53 tons/ac. (ii) (a) 0.21 tons/ac. (b) 0.81 tons/ac. (iii) Main effects of I and S and interactions I×N, I×S and N×S are highly significant. Main effect of N and interaction I×N×S are significant. (iii) Av. yield of cane in tons/ac.

	N_1	N_2	N_3	Mean	S_1	S_2	S_3
I_1	21.75	22.41	21.67	21.94	23.62	22.19	20.01
I_2	20.97	19.36	23.80	21.38	22.88	21.67	19.59
I_3	23 84	25.31	23.69	24.28	26.15	25.79	20.90
Mean	22.19	22.36	23.05	22.53	24.22	23.22	20.17
S_1	24.83	24.83	23.00				
S_2	21.60	23.73	24.33				
S_3	20.14	18.53	21.83				

S.E. of difference of two

1. I marginal means = 0.07 tons/ac.
2. N or S marginal means = 0.27 tons/ac.
3. N or S means at the same level of I = 0.36 tons/ac.
4. I means at the same level of N or S = 0.39 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 55(245).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'ICM'.**

Object :—To find out the optimum dose of N and P in combination with irrigation and spacing for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai*. (c) Nil. (ii) (a) Clay loam. (b) Refer soil analysis, Pusa. (iii) 6, 9.2.1955. (iv) (a) 2 ploughings by mould board plough and 1 by *desi* plough. (b) Flat method. (c) 18 three-budded setts/row. (d) As per treatments. (e) Nil. (v) Nil. (vi) BO—32 (medium). (vii) As per treatments. (viii) 2 intercultural operations. (ix) 57.03". (x) 11.2.1956 to 4.3.1956.

2. TREATMENTS :

Main-plot treatments :

4 levels of irrigation : $I_0=0$, $I_1=2$, $I_2=4$ and $I_3=6$ irrigations.

Sub-plot treatments :

All combinations of (1) and (2)

(1) 3 manurial treatments : M_0=Control, M_1=80 lb./ac. of N as A/S+100 lb./ac. of P_2O_5 as Super and M_2=2 times M_1.

(2) 3 spacings between rows : $S_1=3'$, $S_2=3\frac{1}{2}'$ and $S_3=4'$.

3. DESIGN :

(i) Split-plot (ii) (a) 4 main-plots/block ; 9 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a) 90'×16' for S_1, 91'×16' for S_2, 92'×16' for S_3. (b) 84'×16'. (v) 1 row on either side. (vi) Yes.

4. GENERAL :

(i) Fair at commencetment of monsoon but devastated by floods later on. (ii) Nil. (iii) Cane yield and no of mature stalk. (iv) (a) to (c) N.A. (v) (a) and (b) N.A. (vi) The area was flooded during monsoon. (vii) Nil.

5. RESULTS :

(i) 11.72 tons/ac. (ii) (a) 3.42 tons/ac. (b) 2.22 tons/ac. (iii) Main effect of M and interaction M×S are significant. (iv) Av. yield of cane in tons/ac.

	S$_1$	S$_2$	S$_3$	Mean	M$_0$	M$_1$	M$_2$
I$_0$	13.65	10.67	11.89	12.07	11.44	11.60	13.16
I$_1$	10.06	12.04	9.98	10.69	9.66	11.55	10.87
I$_2$	13.19	12.31	11.59	12.36	11.47	12.41	13.22
I$_3$	11.81	13.08	10.33	11.74	10.86	12.93	11.44
Mean	12.18	12.03	10 95	11.72	10.86	12.12	12.17
M$_0$	11.16	10.80	10.60				
M$_1$	12.17	13.59	10.62				
M$_2$	13.20	11.70	11.62				

S.E. of difference of two

1. I marginal means = 0.93 tons/ac.
2. M or S marginal means = 0.91 tons/ac.
3. M or S means at the same level of I = 1.81 tons/ac.
4. I means at same level of M or S = 1.95 tons/ac.

S.E. body of M×S table = 0.74 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 56(148).**

Site :- Sugarcane Res. Instt., Pusa. **Type :- 'ICM'.**

Object :—To find out the optimum dose of N and P in combination with irrigation and spacing.

1. BASAL CONDITIONS :

(i) (a) *Sanai*—Sugarcane. (b) *Sanai*. (c) Nil. (ii) (a) Heavy loam. (b) Refer soil analysis, Pusa. (iii) 10, 12.2.1956. (iv) (a) Burying *sanai*, plough mould followed by disc harrowing. (b) Flat method. (c) 50 mds/ac. (d) As per treatments. (e) Nil. (v) G.M. with *sanai*. (vi) BO—32. (vii) As per treatments. (viii) Interculturing with 5-tyred Bihar cultivator and earthing up in last week of June, 1956. (ix) 57.54″. (x) 10 to 14.4.1957.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 55(245) on page 847.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Tiller count, height and cane yield. (iv) (a) 1955—N.A. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 8.69 tons/ac. (ii) (a) 2.79 tons/ac. (b) 2.29 tons/ac. (iii) No effect is significant. (iv) Av. yield of cane in tons/ac.

	S$_1$	S$_2$	S$_3$	Mean	M$_0$	M$_1$	M$_2$
I$_0$	8.56	8.84	8.90	8.77	9.13	8.43	8.74
I$_1$	8.70	9.02	7.80	8.51	8.12	9.36	8.05
I$_2$	9.02	8.89	8.50	8.80	8.89	9.27	8.25
I$_3$	9.33	8.62	8.14	8.70	8.83	8.37	8.89
Mean	8.90	8.84	8 34	8.69	8.74	8.86	8.48
M$_0$	9.21	8.90	8.12				
M$_1$	8.92	9.24	8.41				
M$_2$	8.58	8.39	8.48				

S.E. of difference of two

1. I marginal means = 0.76 tons/ac.
2. M or S marginal means = 0.54 tons/ac.
3. M or S at the same level of I = 1.08 tons/ac.
4. I means at the same level of M or S = 1.16 tons/ac.

S.E. of body of M×S table = 0.94 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 57(113).**

Site :- Sugarcane Res. Instt., Pusa. **Type :- 'ICM'.**

Object :—To find out the optimum dose of N and P in combination with irrigation and spacing for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) *Sanai*—Sugarcane. (b) *Sanai.* (c) Nil. (ii) (a) Heavy loam. (b) Refer soil analysis, Pusa. (iii) 1 to 31.3.1957. (iv) (a) Burying of *sanai* one plough mould board followed by disc harrowing. (b) Flat method. (c) 50 mds/ac. (d) As per treatments. (e) —. (v) G.M. with *sanai.* (vi) BO—32. (vii) As per treatments. (viii) Interculturing with 5-tyred Bihar cultivator. Earthing up in early June. (ix) and (x) N.A.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 55(245) on page 847.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Tillers, height, cane yield and mature stalks. (iv) (a) 1955—contd. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 6.73 tons/ac. (ii) (a) 8.16 tons/ac. (b) 2.74 tons/ac. (iii) Main effects of M and S alone are significant. (iv) Av. yield of cane in tons/ac.

	S_1	S_2	S_3	Mean	M_0	M_1	M_2
I_0	6.78	4.66	6.97	6.14	5.77	5.71	6.94
I_1	9.42	5.90	4.88	6.73	5.27	7.24	7.70
I_2	6.73	6.64	7.48	6.28	6.07	6.17	6.61
I_3	10.18	6.87	6.23	7.76	6.86	8.01	8.41
Mean	8.28	5.52	6.39	6.73	5.99	6.78	7.42
M_0	7.07	5.53	5.37				
M_1	8.52	5.45	6.38				
M_2	9.25	5.58	7.42				

S.E. of difference of two

1. I marginal means = 2.22 tons/ac.
2. M or S marginal means = 0.65 tons/ac.
3. M or S means at the same level of I = 1.29 tons/ac.
4. I means at the same level of M or S = 2.46 tons/ac.

S.E. of body of M×S table = 1.12 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 58(297).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'ICM'.**

Object :—To find out the optimum dose of N and P in combination with irrigation and spacing for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) Nil. (ii) (a) Clayey. (b) Refer soil analysis, Pusa. (iii) 5 to 7.2.1958. (iv) (a) 2 mould board ploughings followed by disc harrowing. (b) Flat method. (c) 50 mds/ac. (d) As per treatments. (e) —. (v) Nil. (vi) BO—32. (vii) As per treatments. (viii) 5 interculturings with 5-tyred Bihar cultivator. (ix) 46.75″. (x) 24.3.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 55(245) on page 847.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Tiller count, no. of mature stalks and cane yield. (iv) (a) 1955—contd. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 17.77 tons/ac. (ii) (a) 5.74 tons/ac. (b) 2.58 tons/ac. (iii) Main effects of M, S and I are significant. (iv) Av. yield of cane in tons/ac.

	S_1	S_2	S_3	Mean	M_0	M_1	M_2
I_0	15.68	15.75	11.94	14.46	11.77	16.31	15.29
I_1	18.41	16.10	16.16	16.89	11.86	19.92	18.89
I_2	23.46	20.69	17.83	20.66	15.72	22.70	23.56
I_3	20.48	17.89	18.84	19.07	14.77	19.85	22.59
Mean	19.51	17.61	16.19	17.77	13.53	19.69	20.08
M_0	14.61	13.57	12.40				
M_1	22.23	19.36	17.47				
M_2	21.67	19.87	18.69				

S.E. of difference of two

1. I marginal means = 1.56 tons/ac.
2. M or S marginal means = 1.05 tons/ac.
3. M or S means at the same level of I = 2.10 tons/ac.
4. I means at the same level of M or S = 2.52 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 59(241).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'ICM'.**

Object :—To find out the optimum dose of N and P in combination with irrigation and spacing for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Pusa. (iii) 20 to 22.3.1959. (iv) (a) 3 ploughings by *desi* plough. (b) Flat method. (c) 18 three-budded setts/row. (d) As per treatments. (e) —. (v) Nil. (vi) BO—32. (vii) As per treatments. (viii) 2 weedings and 1 hoeing. (ix) and (x) N.A.

2. TREATMENTS :

Main-plot treatments :

3 levels of irrigation : $I_0=0$, $I_1=2$ and $I_2=4$ irrigations.

Sub-plot treatments :

All combinations of (1) and (2)

(1) 3 manurial treatments : M_0=Control, M_1=80 lb./ac. of N as A/S+100 lb./ac. of P_2O_5 as Super and M_2=2 times M_1.

(2) 3 spacings between rows : $S_1=3'$, $S_2=3\frac{1}{2}'$ and $S_3=4'$.

3. DESIGN .

(i) Split-plot. (ii) (a) 3 main-plots/block ; 9 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a) 90′×16′ for S_1 91′×16′ for S_2 and 92′×16′ for S_3. (b) 84′×16′. (v) One row on either side of the plot breadth-wise. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Cane yield and no. of mature stalks. (iv) (a) to (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Raw data N.A.

5. RESULTS :

(i) 18.77 tons/ac. (ii) N.A. (iii) Main effects of I and M are significant. No other effect is significant. (iv) Av. yield of cane in tons/ac.

	S_1	S_2	S_3	Mean	M_0	M_1	M_2
I_0	17.78	17.63	15.61	17.00	15.28	18.14	17.59
I_1	19.54	17.67	18.66	18.62	16.31	20.02	19.54
I_2	22.22	20.94	18.95	20.70	17.92	21.63	22.55
Mean	19.85	18.75	17.74	18.77	16.50	19.93	19.89
M_0	17.15	16.42	15.94				
M_1	21.67	19.65	18.48				
M_2	20.72	20.16	18.81				

S.E's. N.A.

Crop :- Sugarcane.
Site :- Sugarcane Res. Sub-Stn., Sepaya.

Ref :- Bh. 55(156).
Type :- 'ICM'.

Object :—To find out the optimum spacing and dose of N in combination with irrigation for Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Moong* and *kalai.* (c) Nil. (ii) (a) Sandy soil full of alkaline patches. (b) Nil. (iii) 4 to 7.3.1955. (iv) (a) Two ploughings by *desi* plough preceded by one tractor ploughing. (b) Flat method. (c) 60 three-budded setts in a row of 60.5′. (d) Row to row distance 3′. (v) Nil. (vi) BO—11(early). (vii) As per treatments. (viii) Interculturing, weeding and earthing. (ix) 46.25″. (x) 9 to 12, 16, 17.2.1956.

2. TREATMENTS :

Main-plot treatments :

Strips in one direction—3 levels of irrigation : I_1=2, I_2=4 and I_3=6 irrigations.
Strips in orthogonal direction—3 spacings : S_1=2′, S_2=3′ and S_3=4′ between rows.

Sub-plot treatments :

3 levels of N as A/S : N_1=40, N_2=80 and N_3=120 lb./ac.

3. DESIGN :

(i) Split-cum-strip-plot. (ii) (a) and (b) 9 main-plots (strip combinations)/block ; 3 sub-plots/main-plot. (iii) 2. (iv) (a) 24′×64′ for S_1 24′×66′ for S_2 and 24′×68′ for S_3. (b) 24′×60′ (v) One row on either side of the plot breadth-wise. (vi) Yes.

4. GENERAL :

(i) Poor due to water logging. (ii) Borer attack and red-streak. (iii) Biometric observations and cane yield. (iv) (a) 1955—N.A. (b) No. (c) Nil. (v) (a) Harinagar, Narkatiaganj, Pusa, Majhaulia, Motipur, Pachrukhi, Hasanpur, Dehri-on-Sone and Warisaliganj. (b) Nil. (vi) Nil. (vii) Analysis based on two replications but the experiment was planned with 4 replications.

5. RESULTS :

(i) 8.16 tons/ac. (ii) (a) 7.84 tons/ac. (for I). (b) 3.08 ton/ac. (for S). (c) 2.37 tons/ac. (for I×S). (d) 2.06 tons/ac. (for sub-plot). (iii) No effect is significant. (iv) Av. yield of cane in tons/ac.

	I_1	I_2	I_3	Mean	N_1	N_2	N_3
S_1	8.01	6.90	6.62	7.18	8.52	5.69	7.33
S_2	10.79	9.77	8.89	9.82	9.21	10.72	9.53
S_3	6.71	8.70	7.04	7.48	8.80	6.57	7.07
Mean	8.50	8.46	7.52	8.16	8.84	7.66	7.98
N_1	9.21	9.72	7.59				
N_2	8.57	7.41	7.00				
N_3	7.72	8.25	7.97				

S.E. of difference of two

1. I marginal means = 1.85 tons/ac.
2. S marginal means = 0.73 tons/ac.
3. N marginal means = 0.49 tons/ac.
4. I means at the same level of S = 2.01 tons/ac.
5. S means at the same level of I = 1.07 tons/ac.
6. S means at the same level of N = 1.00 tons/ac.
7. N means at the same level of S or I = 0.84 tons/ac.
8. I means at the same level of N = 1.97 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 56(132).**

Site :- Zonal Centre, Narkatiaganj. **Type :- 'D'.**

Object :—To see the use of Aretan, an organic mercurial fungicide in toning up germination of Sugarcane setts.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Sugarcane. (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Narkatiaganj. (iii) 13 to 15.2.1956. (iv) (a) 2 ploughings with tractor followed by planking. (b) Ridger furrow method of planting. (c) 1800 three-budded setts/ac. (d) Rows 3′ apart. (e)—. (v) 1.37 md./ac. of Super broadcast before planting. (vi) BO—21(medium). (vii) Unirrigated. (viii) and (ix) N.A. (x) 23 to 28.3.1957.

2. TREATMENTS :

All combinations of (1) and (2)+a control

(1) 4 levels of Aretan solution : $L_0=0$, $L_1=\frac{1}{2}$, $L_2=1$ and $L_3=1\frac{1}{2}$ lbs.

(2) 2 methods of dipping setts : D_1=Dipped in and out of the solution and D_2=Dipped in the solution for 15 minutes.

Aretan dissolved in 20 gallons of water and setts dipped in.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 5. (iv) (a) and (b) N.A. (v) N.A. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Nil. (iii) No. of tillers and mature stalks. sucrose % and cane yield. (iv) (a) to (c) No. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 7.11 tons/ac. (ii) 1.66 tons/ac. (iii) No effect is significant. (iv) Av. yield of cane in tons/ac.

Control= 7.50 tons/ac.

	L_0	L_1	L_2	L_3	Mean
D_1	7.37	8.43	6.36	6.32	7.12
D_2	7.27	6.11	6.77	7.90	7.01
Mean	7.32	7.27	6.56	7.11	7.06

S.E. of D marginal mean = 0.37 tons/ac.
S.E. of L marginal mean = 0.52 tons/ac.
S.E. of body of table or control mean = 0.74 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 56(177).**

Site :- Sugarcane Res. Sub-Stn., Patna. **Type :- 'D'.**

Object :—To find the use of Aretan an organic mercurial fungicide in toning up germination of Sugarcane setts.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) 20 lb./ac. of P_2O_5 as Super. (ii) (a) Clayey. (b) N.A. (iii) 11, 12.2.1956. (iv) (a) Tractor ploughing with mould board and disc plough. (b) Flat method. (c) 64 three-budded setts/row. (d) Rows 3′ apart. (e)—. (v) *Sanai* buried at site. (vi) CO—453(late). (vii) Irrigated. (viii) 4 hoeings and earthing up. (ix) 38.70″. (x) 4 to 7.2.1957.

2. TREATMENTS :

Same as in expt. no. 56(132) on page 852.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) One row on each side along length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Mild attack of borer—no control measures taken. (iii) Cane yield. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 25.15 tons/ac. (ii) 1.90 tons/ac. (iii) No effect is significant. (iv) Av. yield of cane in tons/ac.

Control= 24.02 tons/ac.

	L_0	L_1	L_2	L_3	Mean
D_1	24.43	27.25	27.33	22.59	25.40
D_2	20.46	26.56	23.95	29.83	25.20
Mean	22.44	26.90	25.64	26.21	25.30

S.E. of D marginal mean = 0.47 tons/ac.
S.E. of L marginal mean = 0.67 tons/ac.
S.E. of body of table or control mean = 0.95 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 56(178).**

Site :- Sugarcane Res. Sub-Stn., Patna. **Type :- 'D'.**

Object :—To find the use of Aretan an organic mercurial fungicide in toning up germination of Sugarcane setts.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) 20 lb./ac. of P_2O_5 as Super. (ii) (a) Clayey. (b) N.A. (iii) 23 to 25.12.1956. (iv) (a) Tractor ploughing with mould board and disc plough. (b) Flat method. (c) 64 three-budded setts per row. (d) Rows 3′ apart. (e)—. (v) *Sanai* buried at site. (vi) CO—453(late). (vii) Irrigated. (viii) 4 hoeings and earthing up. (ix) 32.41″. (x) 17 to 20.1.1958.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 56(132) on page 852.

5. RESULTS :

(i) 13.43 tons/ac. (ii) 1.32 tons/ac. (iii) No effect is significant. (iv) Av. yield of cane in tons/ac.

Control= 13.89 tons/ac.

	L_0	L_1	L_2	L_3	Mean
D_1	12.26	13.27	13.18	13.52	13.06
D_2	13.12	14.54	13.32	13.75	13.68
Mean	12.69	13.90	13.25	13.63	13.37

S.E. of D marginal mean = 0.33 tons/ac.
S.E. of L marginal mean = 0.47 tons/ac.
S.E. of body of table or control mean = 0.66 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 58(164).**

Site :- Sugarcane Res. Sub-Stn., Patna. **Type :- 'D'.**

Object :—To find the use of Aretan an organic mercurial fungicide in toning up germination of Sugarcane setts.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) 20 lb./ac. of P_2O_5 as Super. (ii) (a) Clayey. (b) N.A. (iii) 15, 16.1.1958. (iv) (a) Tractor ploughing with mould board and disc plough. (b) Flat method. (c) 64 three-budded setts/row. (d) Rows 3′ apart. (e) —. (v) *Sanai* buried at site. (vi) CO—453 (late). (vii) Irrigated. (viii) Hoeing after each irrigation and earthing up. (ix) 25.98″. (x) 22.2.1959 to 12.3 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 56(132) on page 852.

5. RESULTS :

(i) 12.00 tons/ac. (ii) 1.13 tons/ac. (iii) No effect is significant. (iv) Av. yield of cane in tons/ac.

Control = 11.52 tons/ac.

	L_0	L_1	L_2	L_3	Mean
D_1	12.28	11.47	12.38	12.85	12.24
D_2	12.17	10.70	12.11	12.50	11.87
Mean	12.22	11.08	12.25	12.68	12.06

S.E. of D marginal mean = 0.28 tons/ac.
S.E. of L marginal mean = 0.40 tons/ac.
S.E. of body of table or control mean = 0.56 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 59(112).**

Site :- Sugarcane Res. Sub-Stn., Patna. **Type :- 'D'.**

Object :—To find the use of Aretan an organic mercurial fungicide in toning up germination of Sugarcane setts.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Dhaincha.* (c) Nil. (ii) (a) Heavy clay. (b) N.A. (iii) 8.3.1959. (iv) (a) 5 ploughings with tractor, mould board plough and disc harrow. (b) Flat method. (c) 60 mds./ac. (d) Row to row 3′. (e) —. (v) G.M. with *dhaincha.* (vi) CO—453. (vii) Irrigated. (viii) 3 hoeings and earthing up. (ix) 43.53″. (x) 17, 18.2.1960.

2. TREATMENTS :

Same as in expt. no. 56(132) on page 852.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 60.5′×24′. (b) 60.5′×18′. (v) One row on either side along length. (vi) Yes.

4. GENERAL :

(i) Good. (ii) slight borer attack—no control measures taken. (iii) Biometric observations and cane yield. (iv) (a) 1956—N.A. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 16.86 tons/ac. (ii) 1.62 tons/ac. (iii) No effect is significant. (iv) Av. yield of cane in tons/ac

Control = 16.22 tons/ac.

	L_0	L_1	L_2	L_3	Mean
D_1	16.09	17 02	18.20	16.11	16.85
D_2	17.05	16.18	17.39	17.51	17.03
Mean	16.57	16.60	17.80	16.81	16.94

S.E. of D marginal mean = 0.40 tons/ac.
S.E. of L marginal mean = 0.57 tons/ac.
S.E. of body of table or control mean = 0.81 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 57(73).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'D'.**

Object :—To study the effect of Aretan an organic mercurial fungicide on germination, stand and yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) 50 lb./ac. of P_2O_5 as Super. (ii) (a) Light loam. (b) Refer soil analysis, Pusa. (iii) 5.3.1957. (iv) (a) Mould board ploughing, discing, sub-soiling and harrowing. (b) Flat method. (c) 60 mds./ac. (d) Row to row 3′ (e) —. (v) G.M. and 60 lb./ac. of N as A/S+75 lb./ac. of P_2O_5 as Super at planting. (vi) BO—33. (vii) Irrigated. (viii) 5 interculturings and one earthing up. (ix) 37.89″. (x) 27.2.1958.

2. TREATMENTS :

Same as in expt. no. 56(132) on page 852.

3. DESIGN :

(i) R.B.D. (ii) (a). 9 (b) N.A. (iii) 3. (iv) (a) 30′×15′. (b) 30′×9′. (v) One row on either side. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Termite attack—Aldrin sprayed. (iii) Cane yield, germination count and height. (iv) (a) 1956—N.A. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 12.15 tons/ac. (ii) 3.79 tons/ac. (iii) No effect is significant. (iv) Av yield of cane in tons/ac.

Control=14.30 tons/ac.

	L_0	L_1	L_2	L_3	Mean
D_1	12.55	9.65	12.19	11.06	11.36
D_2	8.54	15.02	11.06	14.95	12.39
Mean	10.54	12.33	11.62	13.01	11.88

S.E. of D marginal mean = 1.09 tons/ac.
S.E. of L marginal mean = 1.55 tons/ac.
S.E. of body of table or control mean = 2.19 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 57(75).**

Site :- Sugarcane Res. Stn., Pusa. **Type :- 'D'.**

Object :—To study the effect of Agallol an organic mercurial fungicide for soaking on germination, growth and yield of Sugarcane.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai.* (c) 50 lbs./ac. of P_2O_5 as Super. (ii) (a) Light loam. (b) Refer soil analysis, Pusa. (iii) 2.3.1957. (iv) (a) Mould board ploughing, discing, sub-soiling each with tractor, at Bihar ploughing. (b) to (d) Nil. (e)—. (v) G.M. with *sanai* and 60 lb./ac. of N as A/S.+75 lb./ac. of P_2O_5 as Super at planting. (vi) BO—33. (vii) Irrigated. (viii) 5 interculturings with 5-tyred Bihar cultivator and earthing up in middle of June. (ix) 30.17″. (x) 26.2.1958.

2. TREATMENTS :

All combinations of (1) and (2)+a control.
(1) 2 levels of soaking of setts : D_1=Dipping and taking out and D_2=Dipping for 15 minutes.
(2) 4 levels of Agallol solution : $L_0=0$, $L_1=\frac{1}{2}$, $L_2=1$ and $L_3=1\frac{1}{2}$ lbs.
Agallol dissolved in 20 gallons of water and setts dipped in it.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 3. (iv) (a) 30′×15′. (b) 30′×9′. (v) One row on either side along length. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Termite attack—Aldrin sprayed. (iii) Cane yield and other observations on germination, height and no. of mature stalks. (iv) (a) 1955—1957. (b) No. (c) Nil. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 12.47 tons/ac. (ii) 15.84 tons/ac. (iii) No effect is significant. (vi) Av. yield of cane in tons/ac.

Control= 12.60 tons/ac.

	L_0	L_1	L_2	L_3	Mean
D_1	11.35	13.66	12.36	11.98	12.34
D_2	13.51	10.61	14.02	12.17	12.58
Mean	12.43	12.13	13.19	12.07	12.46

S.E. of D marginal mean = 4.57 tons/ac.
S.E. of L marginal mean = 6.47 tons/ac.
S.E. of body of table or control mean = 9.14 tons/ac.

Crop :- Sugarcane. **Ref :- Bh. 56(1).**

Site :- Zonal Centre, Warisaliganj. **Type :- 'D'.**

Object :—To study the use of Aretan an organic mercurial fungicide in toning up the germination of sugarcane setts.

1. BASAL CONDITIONS :

(i) (a) Sugarcane—*Sanai*—Sugarcane. (b) *Sanai.* (c) Nil. (ii) (a) Sandy loam with scattered alkaline patches. (b) N.A. (iii) 24 to 27.2.1956. (iv) (a) 4 ploughing with tractor and cultivator followed by *hinga.* (b) N.A. (c) 75 three-budded setts/row. (d) Row to row3′. (e) —. (v) G.M. with *Sanai.* 100 lb./ac. of N as A/S and 80 lb./ac. of P_2O_5 as Super applied in furrows at the time of planting. (iv) CO—419 (late). (vii) Irrigated. (viii) 3 weedings and earthing. (ix) 44.05″. (x) 3 to 5.3.1957.

2. TREATMENTS :

Same as in expt. no. 56(132) on page 852.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) 60.5′×216′. (iii) 4. (iv) (a) 60.5′×24′. (b) 60.5′×9′. (v) 3 rows on one side and 2 rows on the other side along the length. (vi) Yes.

4. GENERAL :

(i) Satisfactory, lodged on 25.7.1956 and 1.9.1956. (ii) Nil. (iii) Biometric observations and cane yield. (iv) (a) No. (b) and (c) —. (v) and (vi) Nil. (vii) Abnormally low yield in some plots due to alkali patches.

5. RESULTS :

(i) 27.06 tons/ac. (ii) 5.82 tons/ac. (iii) No effect is significant. (iv) Av. yield of cane in tons/ac.

Control = 25.88 tons/ac.

	L_0	L_1	L_2	L_3	Mean
D_1	24.34	27.82	28.97	33.39	28.63
D_2	21.80	29.14	27.02	25.22	25.79
Mean	23.07	28.48	28.00	29.30	27.21

S.E. of D marginal mean = 1.45 tons/ac.
S.E. of L marginal mean = 2.06 tons/ac.
S.E. of body of table or control mean = 2.91 tons/ac.

Crop :- Cotton ***(Kharif).*** **Ref :- Bh. 58, 59(10).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'M'.**

Object :—To study the effects of N, P, K and lime on Cotton.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Red laterite. (b) Refer soil analysis, Kanke. (iii) 2nd week of June. (iv) (a) 4 ploughings with *desi* plough. (b) Line sowing. (c) N.A. (d) 1.5′×2′. (e) N.A. (v) N.A. (vi) 216—F. (vii) Unirrigated. (viii) Hoeing and weeding. (ix) and (x) N.A.

2. TREATMENTS :

1. Control (no manure).
2. 3600 lb./ac. of lime.
3. 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super+40 lb./ac. of K_2O as Mur. Pot.
4. 3600 lb./ac. of lime+treatment 3.

Lime applied in 1958 only. Residual effect of lime studied in subsequent years.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) 14′×20′. (b) 12′×18′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Cotton-bug attack—Endrine was sprayed. (iii) Grain yield. (iv) (a) 1958—1960. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

1958

(i) 89.1 lb./ac. (ii) 30.4 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of *kapas* in lb./ac.

Treatment	1	2	3	4
Av. yield	16.5	84.8	73 2	181.8

S.E./mean = 13.6 lb./ac.

1959

(i) 147.3 lb./ac. (ii) 78.2 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of *kapas* in lb./ac.

Treatment	1	2	3	4
Av. yield	18.1	205.7	257.5	107.8

S.E./mean = 35.0 lb./ac.

Crop :- Castor. **Ref :- Bh. 54(24).**

Site :- Bot. Sub-Stn., Dumka. **Type :- 'M'.**

Object :—To find the optimum dose of N, P and K for Castor.

1. BASAL CONDITIONS :

(i) (a) No. (b) *Rahar.* (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 8, 9.8.1954. (iv) (a) 3 ploughings by *desi* plough and one tractor ploughing. (b) Dibbled. (c) N.A. (d) 2′×1½′. (e) 2. (v) Nil. (vi) Local—(early). (vii) Unirrigated. (viii) 2 hoeings. (ix) 16.05″, (x) 16.2.1955.

2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 3 levels of N as A/S : $N_0=0$, $N_1=40$ and $N_2=60$ lb./ac.
(2) 3 levels of P_2O_5 as Super : $P_0=0$, $P_1=40$ and $P_2=60$ lb./ac.
(3) 3 levels of K_2O as Mur. Pot. : $K_0=0$, $K_1=40$ and $K_2=60$ lb./ac.

3. DESIGN :

(i) 3^3 partially confd. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 10′×18′. (b) 6′×15′. (v) One row alround the plot. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Nil. (iii) Germination, stand at thinning, date of flowering, stand at maturity and seed yield. (v) (a) 1953—contd. (b) and (c) No. (v) (a) Sabour and Purnea. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 221 lb./ac. (ii) 97.6 lb./ac. (iii) N and P effects are highly significant. (iv) Av. yield of seed in lb./ac.

	P_0	P_1	P_2	Mean	K_0	K_1	K_2
N_0	69	210	250	176	184	150	194
N_1	95	293	314	243	236	226	267
N_2	110	260	366	245	244	270	223
Mean	91	254	319	221	221	215	228
K_0	83	283	298				
K_1	88	233	324				
K_2	102	248	334				

S.E. of any marginal mean = 16.3 lb./ac.
S.E. of body of any table = 28.2 lb./ac.

Crop :- Castor. **Ref :- Bh. 55(52).**

Site :- Bot. Sub-Stn., Dumka. **Type :- 'M'.**

Object :—To find the optimum dose of N, P and K for Castor.

1. BASAL CONDITIONS:

(i) (a) No. (b) Castor and *Til.* (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 22.7.1955 and 14 to 16.8.1955. (iv) (a) One ploughing by tractor and 3 by *desi* plough. (b) Dibbling. (c) N.A. (d) 2′×1½′. (e) 2. (v) Nil. (vi) Local (early). (vii) Unirrigated. (viii) Weeding. (ix) 30.90″. (x) 13.2.1956.

2. TREATMENTS :

All combination of (1), (2) and (3)
(1) 3 levels of N as A/S : N_1=20, N_2=40 and N_3=60 lb./ac.
(2) 3 levels of P_2O_5 as Super : P_1=20, P_2=40 and P_3=60 lb./ac.
(3) 3 levels of K_2O as Mur. Pot. : K_1=20, K_2=40 and K_3=60 lb./ac.

3. DESIGN :

(i) 3^3 partially confd. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 10′×18′. (b) 6′×15′. (v) One row alround. (vi) Yes.

4. GENERAL :

(i) Not good. (ii) Attacked by stem-borer and burn disease—control measures N.A. (iii) Germination, stand at thinning, date of flowering. disease incidence, stand at maturity and yield per plot. (iv) (a) 1953—contd. (b) and (c) No. (v) (a) Sabour and Purnea. (b) N.A. (vi) and (vii) After first sowing, the seeds could not germinate due to heavy rains, second sowing was done, which caused the poor growth of the crop.

5. RESULTS :

(i) 153 lb./ac. (ii) 84.3 lb./ac. (iii) Only N effect and interaction N×P×K are significant. (iv) Av. yield of seed in lb./ac.

	P_1	P_2	P_3	Mean	K_1	K_2	K_3
N_1	137	131	141	136	131	132	146
N_2	145	119	149	138	140	145	128
N_3	167	171	220	186	188	158	213
Mean	150	140	170	153	153	145	162
K_1	130	156	174				
K_2	145	108	183				
K_3	174	158	154				

S.E. of any marginal mean = 14.0 lb./ac.
S.E. of body of any table = 24.3 lb./ac.

Crop :- Castor. **Ref :- Bh. 56(23).**

Site :- Bot. Sub-Stn., Dumka. **Type :- 'M'.**

Object :—To find the optimum dose of N, P and K for Castor.

1. BASAL CONDITIONS :

(i) (a) No. (b) *Rahar*. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 5, 6.7.1956. (iv) (a) One time by tractor and 3 times by *desi* plough. (b) and (c) N.A. (d) $2' \times 1\frac{1}{2}'$. (e) N.A. (v) Nil. (vi) Local (early). (vii) Unirrigated. (viii) 3 spacings and 2 weedings. (ix) 55.02". (x) 3.4.1957.

2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 3 levels of N as A/S : $N_1=20$, $N_2=40$ and $N_3=60$ lb./ac.
(2) 3 levels of P_2O_5 as Super : $P_1=40$, $P_2=60$ and $P_3=80$ lb./ac.
(3) 3 levels of K_2O as Mur. Pot. : $K_1=40$, $K_2=60$ and $K_3=80$ lb./ac.

Fertilizers applied in furrows 10 days after sowing.

3. DESIGN :

(i) 3^3 partially confd. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) $10' \times 18'$. (b) $6' \times 15'$. (v) One row on either side of the plot. (vi) No.

4. GENERAL :

(i) Poor. (ii) Nil. (iii) Germination, yield stand at thinning, general flowering, disease incidence and stand at maturity. (iv) (a) 1953—contd. (b) and (c) No. (v) (a) and (b) Sabour and Purnea. (vi) and (vii) Nil.

5. RESULTS :

(i) 175 lb./ac. (ii) 110.4 lb./ac. (iii) Main effects of N and P are highly significant. Interaction N×P is significant. (iv) Av. yield of seed in lb./ac.

	P_1	P_2	P_3	Mean	K_1	K_2	K_3
N_1	97	152	270	173	165	143	211
N_2	154	83	153	130	135	130	126
N_3	137	194	338	223	238	231	201
Mean	130	143	254	175	179	168	179
K_1	131	146	261				
K_2	123	159	220				
K_3	135	123	280				

S.E. of any marginal mean = 18.4 lb./ac.
S.E. of body of any table = 31.9 lb./ac.

Crop :- Castor. **Ref :- Bh. 57(7).**
Site :- Bot. Sub-Stn., Dumka. **Type :- 'M'.**

Object :—To find the optimum dose of N, P and K for Castor.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Wheat. (c) Night soil. (ii) (a) and (b) N.A. (iii) 20.7.1957. (iv) (a) N.A. (b) Dibbling with *khurpi*. (c) and (d) N.A. (e) 2. (v) Night soil applied. (vi) Local. (vii) Unirrigated. (viii) Thinning of plants and weeding by hand. (ix) 24.91". (x) 2.4.1958.

2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 3 levels of N as A/S : $N_1=20$, $N_2=40$ and $N_3=80$ lb./ac.
(2) 3 levels of P_2O_5 as Super : $P_1=40$, $P_2=60$ and $P_3=80$ lb./ac.
(3) 3 levels of K_2O as Mur. Pot. : $K_1=40$, $K_2=60$ and $K_3=80$ lb./ac.

3. DESIGN :

(i) 3^3 partially confd. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 10′×12′. (b) 6′×9′. (v) 2′×1½′. (vi) Yes.

4. GENERAL ;

(i) Poor. (ii) Nil. (iii) Germination, general flowering, stand, height at maturity and yield. (iv) (a) 1957. (b) and (c) N.A. (v) (a) and (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 173 lb./ac. (ii) 65.8 lb./ac. (iii) No effect is significant. (iv) Av. yield of seed in lb./ac.

	P_1	P_2	P_3	Mean	K_1	K_2	K_3
N_1	118	182	192	164	177	195	121
N_2	225	177	162	188	170	214	179
N_3	147	173	179	166	132	225	142
Mean	164	177	178	173	160	211	147
K_1	110	173	197				
K_2	238	210	186				
K_3	142	149	151				

S.E. of any marginal mean = 11.0 lb./ac.
S.E. of body of any table = 19.0 lb./ac.

Crop :- Castor. **Ref :- Bh. 54(30).**

Site :- Bot. Sub-Stn., Monghyr. **Type :- 'M'.**

Object :—To find the optimum dose of N, P and K for Castor.

1. BASAL CONDITIONS :

(i) (a) No. (b) *Rahar*. (c) Nil. (ii) (a) Clay. (b) N.A. (iii) 22, 23.11.1954. (iv) (a) 2 *desi* ploughings. (b) Dibbling with *khurpi*. (c) N.A. (d) 2′×1½′. (e) 2. (v) Nil. (vi) Local. (vii) Unirrigated. (viii) 4 weedings and 2 spadings. (ix) 7.14″. (x) 24.4.1955.

2. TREATMENTS :

All combination of (1), (2) and (3)

(1) 3 levels of N as A/S : $N_1=20$, $N_2=40$ and $N_3=80$ lb./ac.
(2) 3 levels of P_2O_5 as Super : $P_0=0$, $P_1=40$ and $P_2=60$ lb./ac.
(3) 3 levels of K_2O as Mur.Pot. : $K_0=0$, $K_1=40$ and $K_2=60$ lb./ac.

3. DESIGN :

(i) 3^3 partially confd. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 10′×18′. (b) 6′×15′. (v) 2′×1½′. (vi) Yes.

4. GENERAL :

(i) Poor, no lodging. (ii) N.A. (iii) Germination and yield of seed. (iv) (a) 1954. (b) and (c) No. (v) (a) All botanical sub-stations. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 348 lb./ac. (ii) 269.8 lb./ac. (iii) Only the interaction N×K is significant. (iv) Av. yield of seed in lb./ac.

	P_0	P_1	P_2	Mean	K_0	K_1	K_2
N_1	285	259	275	273	358	259	202
N_2	389	415	394	399	244	477	477
N_3	353	327	441	373	280	327	513
Mean	342	334	370	348	294	354	397
K_0	321	244	316				
K_1	280	451	332				
K_2	425	306	461				

S.E. of any marginal mean = 45.0 lb./ac.
S.E. of body of any table = 77.9 lb./ac.

Crop :- Castor. **Ref :- Bh. 54(116).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To find the optimum dose of N, P and K for Castor.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 10.8.1954. (vi) (a) 4 ploughings. (b) Dibbling with *khurpi*. (c) 16 to 20 srs./ac. (d) 2′×1½′. (e) 2. (v) 20 C.L. of F.Y.M. to the whole area. (vi) Local (medium). (vii) Unirrigated. (viii) Hoeing and weeding once. (ix) 11.60″. (x) 10.2.1955.

2. TREATMENTS :

All combinations of (1), 2 and (3)
(1) 3 levels of N as A/S : $N_0=0$, $N_1=40$ and $N_2=80$ lb./ac.
(2) 3 levels of P_2O_5 as Super : $P_0=0$, $P_1=40$ and $P_2=80$ lb./ac.
(3) 3 levels of K_2O as Mur. Pot. : $K_0=0$, $K_1=40$ and $K_2=80$ lb./ac.

3. DESIGN :

(i) 3^3 partially confd. (ii) (a) 9. (b) 90′×56′. (iii) 4. (iv) (a) 18′×10′. (b) 15′×6′. (v) 1½′×2′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Seed yield. (iv) (a) 1953—contd. (b) No. (c) Nil. (v) (a) Purnea and Dumka (b) N.A. (vi) and (vii) N.A.

5. RESULTS :

(i) 389 lb./ac. (ii) 46.0 lb./ac. (iii) Only N effect is highly significant. (iv) Av. yield of seed in lb./ac.

	P_0	P_1	P_2	Mean	K_0	K_1	K_2
N_0	290	322	300	304	278	322	312
N_1	362	283	389	345	339	339	356
N_2	600	467	489	519	556	456	545
Mean	417	358	393	389	391	372	404
K_0	450	334	389				
K_1	401	322	395				
K_2	401	418	395				

S.E. of any marginal mean = 7.7 lb./ac.
S.E. of body of any table = 13.3 lb./ac.

Crop :- Castor *(Kharif).* **Ref :- Bh. 55(188).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To find the optimum dose of N, P and K for Castor.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 23.6.1955. (iv) (a) 4 ploughings. (b) Dibbling by *khurpi.* (c) 16 to 20 lb./ac. (d) 2′×1½′. (e) 1. (v) F.Y.M. applied before sowing. (vi) Local (medium). (vii) Unirrigated. (viii) Hoeing and weeding. (ix) 30.30″. (x) 6, 7.2.1956.

2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 3 levels of N as A/S : $N_1=40$, $N_2=60$ and $N_3=80$ lb./ac.
(2) 3 levels of P_2O_5 as Super : $P_0=0$, $P_1=40$ and $P_2=60$ lb./ac.
(3) 3 levels of K_2O as Mur. Pot. : $K_0=0$, $K_1=40$ and $K_2=60$ lb./ac.

. DESIGN :

(i) 3^3 partially confd. (ii) (a) 9. (b) 90′×54′. (iii) 4. (iv) (a) 18′×10′. (b) 15′×6′. (v) 1½′×2′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Dates of germination and flowering, plotwise yield of seed. (iv) (a) 1953—contd. (b) No. (c) Nil. (v) (a) Purnea and Dumka. (b) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 1335 lb./ac. (ii) 220.6 lb./ac. (iii) N effect and interaction N×P×K are highly significant. (iv) Av. yield of seed in lb./ac.

	P_0	P_1	P_2	Mean	K_0	K_1	K_2
N_1	500	418	466	462	418	456	511
N_2	758	994	1169	974	1025	981	915
N_3	2489	2660	2558	2569	2544	2612	2551
Mean	1249	1358	1398	1335	1329	1350	1326
K_0	1364	1238	1385				
K_1	1186	1426	1436				
K_2	1197	1409	1371				

S.E. of any marginal mean = 36.8 lb./ac.
S.E. of body of any table = 63.7 lb./ac.

Crop :- Castor *(Kharif).* **Ref :- Bh. 56(65).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object : – To find the optimum dose of N, P and K for Castor.

1. BASAL CONDITIONS:

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 26.7.1956. (iv) (a) 4 ploughings. (b) Dibbling by *khurpi.* (c) 16 to 20 lb./ac. (d) 2′×1½′. (e) 1. (v) F.Y.M. and oilcakes applied. (vi) N.A. (vii) Unirrigated. (viii) Hoeing and weeding. (ix) 47.00″. (x) 2.3.1957.

2. TREATMENTS :

All combination of (1), (2) and (3)

(1) 3 levels of N as A/S : $N_1=40$, $N_2=60$ and $N_3=80$ lb./ac.
(2) 3 levels of P_2O_5 as Super : $P_1=60$, $P_2=80$ and $P_3=100$ lb./ac.
(3) 3 levels of K_2O as Mur. Pot. : $K_1=60$, $K_2=80$ and $K_3=100$ lb./ac.

3. DESIGN :

(i) 3^3 partially confd. (ii) (a) 9. (b) 90′×58′. (iii) 4. (iv) (a) 18′×10′. (b) 15′×6′. (v) 1½′×2′. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Nil. (iii) Dates of germination and flowering, and seed yield. (iv) (a) 1953—contd. (b) No. (c) Nil. (v) (a) Purnea and Dumka. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 427 lb./ac. (ii) 70.8 lb./ac. (iii) N and P effects are highly significant. (iv) Av. yield of seed in lb./ac.

	P_1	P_2	P_3	Mean	K_1	K_2	K_3
N_1	295	293	278	289	261	319	288
N_2	322	272	259	284	280	272	301
N_3	768	710	648	709	710	726	690
Mean	462	425	396	427	417	439	426
K_1	430	428	394				
K_2	462	457	399				
K_3	493	392	394				

S.E. of any marginal mean = 11.8 lb./ac.
S.E. of body of any table = 20.4 lb./ac.

Crop :- Castor *(Kharif)*. **Ref :- Bh. 57(26).**
Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To find the optimum dose of N, P and K for Castor.

1, BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 5.7.1957. (iv) (a) 4 ploughings. (b) Dibbling. (c) 16 to 20 lb./ac. (d) N.A. (e) 2. (v) Nil. (vi) N.A. (vii) Unirrigated. (viii) Hoeing and weeding once. (ix) 18.42″. (x) 12.3.1958.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 56(65) on page 863.

4. GENERAL :

(i) N.A. (ii) Nil. (iii) Seed yield. (iv) (a) 1953—contd. (b) and (c) N.A. (v) (a) Purnea and Dumka. (b) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 611 lb./ac. (ii) 121.1 lb./ac. (iii) only N effect is highly significant. (iv) Av. yield of seed in lb./ac.

	P_1	P_2	P_3	Mean	K_1	K_2	K_3
N_1	446	482	471	467	441	487	471
N_2	524	498	545	522	477	550	539
N_3	917	756	856	843	871	856	804
Mean	629	579	624	611	596	631	605
K_1	612	581	597				
K_2	628	606	658				
K_3	648	550	617				

S.E. of any marginal mean = 20.2 lb./ac.
S.E. of body of any table = 35.0 lb./ac.

Crop :- Castor ***(Kharif).*** **Ref :- Bh. 57(27).**
Site :- Agri. Res. Instt., Sabour. **Type :- 'C'.**

Object :—To determine the optimum time of sowing for getting highest yield of Castor.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) As per treatment. (iv) (a) 4 ploughings. (b) Dibbling by *khurpi.* (c) 16 to 20 lb./ac. (d) 2′×1½′, (e) 2. (v) F.Y.M. applied. 40 lb./ac. of N as A/S applied in two doses half before sowing and half after germination. (vi) N.A. (vii) Unirrigated. (viii) Hoeing with rotary hoe and weeding. (ix) 19.70″. (x) 28.3.1958 to 12.4.1958

2. TREATMENTS :

6 dates of sowing : D_1=1.7.1957, D_2=16.7.1957, D_3=1.8.1957, D_4=1.10.1957, D_5=16.10.1957, and D_6=1.11.1957.

3. DESIGN :

(i) R.B.D. (ii) (a) 3. (b) 40′×38′. (iii) 4. (iv) (a) 18′×12′. (b) 15′×8′. (v) 1½′×2′. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Nil. (iii) Dates of germination and flowering and seed yield. (iv) (a) 1956—N.A. (b) No. (c) Nil. (v) (a) Purnea. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 434 lb./ac. (ii) (a) 178.4 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of seed in lb./ac.

Treatment	D_1	D_2	D_3	D_4	D_5	D_6
Av. yield	898	793	606	151	93	64

S.E./mean = 89.2 lb./ac.

Crop :- Castor ***(Kharif).*** **Ref :- Bh. 58(312).**
Site :- Agri. Res. Instt., Sabour. **Type :- 'C'.**

Object :—To determine the most suitable sowing time of castor for highest yield of Castor.

1, BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) As per treatments. (iv) (a) 4 ploughings by *desi* plough followed by planking. (b) Dibbling. (c) 16 lb./ac. (d) Rows 1½′ apart. (e) 2. (v) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (vi) Local. (vii) Irrigated. (viii) One weeding and one hoeing. (ix) 34.86″. (x) 31.3.1959.

2. TREATMENTS :

6 dates of sowing : D_1=1.7.1958, D_2=16.7.1958, and D_3=1.8.1958 (all early), D_4=1.10.1958, D_5=16.10.1958 and D_6=1.11.1958 (all late).

3. DESIGN :

(i) R.B.D. (ii) (a) 6. (b) 54′×32′. (iii) 4. (iv) (a) 15′×18′. (b) 12′×15′. (v) 1½′×1½′. (vi) Yes.

4. GENERAL :

(i) Crops sown early were good and crops sown late were poor. (ii) Nil. (iii) Yield of castor seed. (iv) (a) to (c) N.A. (v) N.A. (vi) and (vii) Experiment analysed saparately for early and late sowings.

RESULTS :

Early Crop

(i) 188 lb./ac. (ii) 54.4 lb./ac. (iii) Treatment differences are significant. (iv) Av. yield of seed in lb./ac.

Treatment	D_1	D_2	D_3
Av. yield	198	249	117

S.E./mean = 27.2 lb./ac.

Late Crop

(i) 73 lb./ae. (ii) 8.1 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of seed in lb./ac.

Treatment	D_4	D_5	D_6
Av. yield	70	78	70

S.E./mean = 4.1 lb./ac.

Crop :- Groundnut. **Ref :- Bh. 54(23).**
Site :- Bot. Sub-Stn., Dumka. **Type :- 'M'.**

Object :—To find the optimum dose of N, P and K for Groundnut.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) N.A. (c) No. (ii) (a) Sandy loam. (d) N.A. (iii) 10th to 12 July, 1954. (iv) (a) One tractor ploughing and 3 times *desi* ploughing. (b) Dibbling. (c) N.A. (d) 18″×12″. (e) One. (v) Nil. (vi) Local (early). (vii) Unirrigated. (viii) 4 weedings and 5 earthings. (ix) 27.70″. (x) 28 December 1954.

2. TREATMENTS :

All combinations of (1), (2) and (3)

1. 3 levels of N as A/S : $N_0=0$, $N_1=15$ and $N_2=30$ lb./ac.
2. 3 levels of P_2O_5 as Super : $P_0=0$, $P_1=30$ and $P_2=60$ lb./ac.
3. 3 levels of K_2O as Mur. Pot. : $K_0=0$, $K_1=30$ and $K_2=60$ lb./ac.

3. DESIGN :

(i) 3^3 partially confd. (ii) (a) 9. (b) N.A. (iii) 4. (iv) 12′×26′. (b) 9′×24′. (v) $1\frac{1}{2}$′×1′. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Nil. (iii) Germination and seed yield. (iv) (a) 1953—contd. (b) and (c) No. (v) (a) and (b) Sabour and Purnea. (vi) and (vii) Nil.

5. RESULTS :

(i) 841 lb./ac. (ii) 204.9 lb./ac. (iii) No effect is significant. (iv) Av. yield of pod in lb./ac.

	N_0	N_1	N_2	Mean	K_0	K_1	K_2
P_0	851	784	955	863	901	802	888
P_1	843	868	741	817	801	821	830
P_2	907	819	802	843	828	732	968
Mean	867	824	832	841	843	785	895
K_0	877	858	795				
K_1	765	767	823				
K_2	959	847	879				

S.E. of any marginal means = 34.2 lb./ac.
S.E. of body of any table = 59.1 lb./ac.

Crop :- Groundnut. **Ref :- Bh. 55(54).**

Site :- Bot. Sub-Stn., Dumka. **Type :- 'M'.**

Object :—To find the optimum dose of N, P and K for Groundnut.

1. BASAL CONDITIONS :

(i) (a) Not followed. (b) Groundnut—Maize—*Rahar*. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 5 to 9.8.1955. (iv) (a) One ploughing by tractor and 3 ploughings by *desi* plough. (b) Dibbling. (c) N.A. (d) 18″×12″. (e) 1. (v) Nil. (vi) Local (early). (vii) Unirrigated. (viii) Weeding and interculturing from 11 to 14.9.1955. (ix) 12.78″. (x) 25.12.1956.

2. TREATMENTS :

Same as in expt. no. 54(23) on page 866.

3. DESIGN :

(i) 3^3 partially confd. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 12′×26′. (b) 9′×24′. (v) 1½′×1′. (vi) Yes.

4. GENERAL :

(i) Medium. (ii) White ant attack—BHC powder applied. (iii) Germination, yield of pod. Dates of flowering, disease and pest incidence. (iv) (a) 1953—contd. (b) and (c) No. (v) (a) and (b) Sabour and Purnea. (vi) and (vii) Due to late sowing, the yield of the crop was not good.

5. RESULTS :

(i) 1168 lb./ac. (ii) 243.1 lb./ac. (iii) Only P effect is significant. (iv) Av. yield of pod in lb./ac.

	N_0	N_1	N_2	Mean	K_0	K_1	K_2
P_0	925	972	1162	1020	1018	1035	1007
P_1	1162	1249	1301	1237	1251	1268	1193
P_2	1234	1264	1242	1247	1201	1232	1307
Mean	1107	1162	1235	1168	1157	1178	1169
K_0	1052	1190	1227				
K_1	1117	1173	1244				
K_2	1152	1121	1234				

S.E. of any marginal mean = 40.5 lb./ac.
S.E. of body of any table = 70.2 lb./ac.

Crop :- Groundnut. **Ref :- Bh. 56 (21).**

Site :- Bot. Sub-Stn., Dumka. **Type :- 'M'.**

Object :—To find the optimum dose of N, P and K for Groundnut.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 11 to 14.7.1956. (iv) (a) One ploughing by tractor and 3 ploughings by *desi* plough. (b) Dibbling. (c) N.A. (d) 1′×1′. (e) 1. (v) Nil. (vi) Local (early). (vii) Unirrigated. (viii) 3 weedings and interculturings. (ix) 47.7″. (x) 1 to 14.12.1956.

2. TREATMENTS :

Same as in expt. 54(23) on page 866.

3. DESIGN :

(i) 3^3 partially confd. (ii) (a) 9. b) N.A. (iii) 4. (iv) (a) 12′×26′. (b) 10′×24′. (v) 1′×1′. (vi) Yes.

GENERAL :

(i) Good. (ii) Slight attack of *tikka* disease. (iii) Germination, flowering, disease incidence and yield of pod. (iv) (a) 1953—contd. (b) and (c) No. (v) (a) Sabour and Purnea. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1242 lb./ac. (ii) 185.3 lb./ac. (iii) Only interaction N×K is significant. (iv) Av. yield of pod in lb./ac.

	N_0	N_1	N_2	Mean	K_0	K_1	K_2
P_0	1260	1227	1316	1268	1242	1237	1324
P_1	1200	1225	1246	1224	1196	1246	1229
P_2	1215	1211	1278	1235	1258	1163	1283
Mean	1225	1221	1280	1242	1232	1215	1279
K_0	1091	1233	1373				
K_1	1252	1178	1215				
K_2	1332	1252	1252				

S.E. of any marginal mean = 30.9 lb./ac.
S.E. of body of any table = 53.5 lb./ac.

Crop :- Groundnut ***(Kharif)*****.** **Ref :- Bh. 58, 59(9).**
Site :- Agri. Res. Instt., Kanke. **Type :- 'M'.**

Object :—To study the effect of N, P, K and lime on Groundnut.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Red laterite. (b) Refer soil analysis, Kanke. (iii) 2nd week of June. (iv) (a) ploughings with *desi* plough. (b) Line sowing. (c) N.A. (d) 10″×12″. (e) N.A. (v) N.A. (vi) *Giriak.* (vii) Unirrigated. (viii) Hoeing and weeding. (ix) and (x) N.A.

2. TREATMENTS :

1. Control (no manure).
2. 3600 lb./ac. of lime.
3. 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super+40 lb./ac. of K_2O as Mur. Pot.
4. Treatment 3+3600 lb./ac. of lime.

Lime applied in 1958 only. Residual effect of lime studied in subsequent years.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) 14′×20′. (b) 12′×18′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Nil. (iii) Pod yield. (iv) (a) 1958—1960. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

1958

(i) 994 lb./ac. (ii) 162.4 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of pod in lb./ac.

Treatment	1	2	3	4
Av. yield	584	1193	708	1489

S.E./mean = 72.6 lb./ac.

1959

(i) 922 lb./ac. (ii) 130.1 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of pod in lb./ac.

Treatment	1	2	3	4
Av. yield	514	1264	592	1317

S.E./mean = 58.2 lb./ac.

Crop :- Groundnut. **Ref :- Bh. 56(13).**

Site :- Bot. Sub-Stn., Kunke. **Type :- 'M'.**

Object :—To findout the optimum dose of N, P and K for Groundnut.

1. BASAL CONDITIONS :

(i) (a) No. (b) *Rahar*. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 5.7.1956. (v) (a) to (e) N.A. (v) Nil. (vi) *Giriak* (local). (vii) Rainfed. (viii) Weeding by hand and hand hoe. (ix) 26.21". (x) 12 to 20.12.1956.

2. TREATMENTS :

Same as in expt. no. 54(23) on page 866.

3. DESIGN :

(i) 3^3 partially confd. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 12'×26'. (b) 10'×24'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Affected by caterpillar—Endrine sprayed. (iii) Pod yield. (iv) (a) 1956—1957. (b) and (c) No. (v) (a) Sabour, Purnea and Dumka. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1065 lb./ac. (ii) 232.9 lb./ac. (iii) Main effects and interactions are not significant. (iv) Av. yield of pod in lb./ac.

	N_0	N_1	N_2	Mean	K_0	K_1	K_2
P_0	1107	1120	1004	1077	1042	1039	1151
P_1	1155	980	1116	1083	1019	1190	1042
P_2	953	1124	1031	1036	976	1085	1046
Mean	1072	1074	1050	1065	1012	1104	1080
K_0	1023	967	1046				
K_1	1042	1167	1105				
K_2	1151	1089	1000				

S.E. of any marginal mean = 38.8 lb./ac.
S.E. of body of any table = 67.2 lb./ac.

Crop :- Groundnut. **Ref :- Bh. 57(1).**

Site :- Bot. Sub-Stn., Kanke. **Type :- 'M'.**

Object :—To find the optimum dose for N, P and K for Groundnut.

1. BASAL CONDITIONS :

(i) (a) No. (b) and (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 11.7.1957. (iv) (a) 3 ploughing by *desi* ploughs and beaming. (b) In furrows. (c) N.A. (d) 12"×12". (e) Nil. (v) Nil. (vi) *Giriak* (medium). (vii) Unirrigated. (viii) 3 hoeings and hand weeding. (ix) 35.51". (x) 30.11.1957 to 3.12.1957.

2. TREATMENTS :

Same as in 54(23) on page 866.

3. DESIGN :

(i) 3^3 partially confd. (ii) (a) None. (b) N.A. (iii) 4. (iv) (a) 12'×22'. (b) 10'×20'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Normal. (ii) Affected by *tikka* and caterpiller— 2 to 3 sprays of copper fungicide and Bordeaux mixtures ; dusting with BHC and Endrine spray. (iii) Pod yield. (iv) (a) 1956—1957. (b) and (c) Yes. (v) (a) Sabour, Purnea and Dumka. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 880 lb./ac. (ii) 275.1 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of pod in lb./ac.

	N_0	N_1	N_2	Mean	K_0	K_1	K_2
P_0	921	896	907	908	875	912	937
P_1	909	844	909	888	918	928	816
P_2	889	884	764	846	787	826	925
Mean	906	875	860	880	860	889	893
K_0	846	891	844				
K_1	937	837	891				
K_2	937	896	846				

S.E. of any marginal mean = 45.8 lb./ac.
S.E. of body of any table = 79.4 lb./ac.

Crop :- Groundnut *(Kharif)*. **Ref :- Bh. 55(185).**
Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To test the effect of combinations of N, P and K on the yield of Groundnut.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 23.6.1955. (iv) (a) 4 ploughings. (b) N.A. (c) 80 lb./ac. (d) N.A. (e) 1. (v) Nil. (vi) Local (late). (vii) Unirrigated. (viii) 1 hoeing and 1 weeding (ix) 30.00". (x) 20.12.1955.

2. TREATMENTS :

Same as in expt. no. 54(23) on page 866.

3. DESIGN :

(i) 3^3 partially confd. (ii) (a) 9. (b) 108'×78'. (iii) 4. (iv) (a) 26'×12'. (b) 24'×10'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Dates of germination and flowering, yield of groundnut. (iv) (a) 1954—1956. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) N.A.

5. RESULTS :

(i) 2558 lb./ac. (ii) 351.8 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of pod in lb./ac.

	N_0	N_1	N_2	Mean	K_0	K_1	K_2
P_0	2478	2480	2440	2466	2306	2485	2606
P_1	2772	2586	2434	2597	2591	2638	2562
P_2	2761	2542	2532	2612	2758	2469	2610
Mean	2670	2536	2469	2558	2552	2531	2592
K_0	2750	2441	2465				
K_1	2595	2529	2469				
K_2	2666	2638	2472				

S.E. of any marginal mean = 58.6 lb./ac.
S.E. of body of any table = 101.6 lb /ac.

Crop :- Groundnut. ***(Kharif).*** **Ref :- Bh. 56(75).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To test the effect of combination of N, P and K on the yield of Groundnut.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 18.6.1956. (iv) (a) 4 ploughings. (b) N.A. (c) 80 lb./ac. (d N.A. (e) 1. (v) Nil. (vi) Local (late). (vii) Unirrigated. (viii) 1 hoeing and 1 weeding. (ix) 53.30″. (x) 20.12.1956.

2. TREATMENTS :

Same as in expt. no. 54(23) on page 866.

3. DESIGN :

(i) 3^3 partially confd. (ii) (a) 9. (b) 108′×78′. (iii) 4. (iv) (a) 26′×12′. (b) 24′×10′. (v) 1′×1′. (vi) Yes.

4 GENERAL :

(i) Good. (ii) Nil. (iii) Dates of germination and flowering, groundnut yield. (iv) (a) 1954—1956. (b) No. (c) Nil. (v) (a) and (b) None. (vi) and (vii) Nil.

5. RESULTS :

(i) 959 lb./ac. (ii) 139.3 lb./ac. (iii) Only K effects are significant. (iv) Av. yield of pod in lb./ac.

	N_0	N_1	N_2	Mean	K_0	K_1	K_2
P_0	1030	960	992	995	997	995	992
P_1	886	966	940	931	1024	923	845
P_2	914	1014	926	951	976	998	880
Mean	943	980	953	959	999	972	906
K_0	945	1038	1014				
K_1	1039	945	932				
K_2	846	957	915				

S.E. of any marginal mean = 23.2 lb./ac.
S.E. of body of any table = 40.2 lb./ac.

Crop :- Groundnut. **Ref :- Bh. 54(22).**

Site :- Bot. Sub-Stn., Dumka. **Type :- 'C'.**

Object :—To find out the optimum spacing for Groundnut.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Pea and Gram. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 15.6.1954. (iv) (a) Ploughings by *desi* plough. (b) Dibbling as per treatments. (c) and (d) As per treatments. (e) 1. (v) N.A. (vi) Local (early). (vii) Unirrigated. (viii) Ridgers after germination. 4 weedings and earthings. (ix) 45.40″. (x) 15.6.1954.

2. TREATMENTS :

Main-plot treatments :

All combinations of (1) and (2)

(1) 2 methods of planting : M_1=Ridges and M_2=Flat.

(2) 3 row spacings : $R_1=1'$, $R_2=2'$ and $R_3=3'$.

Sub-plot treatments :

3 plant spacings : $P_1=6''$, $P_2=9''$ and $P_3=12''$.

3. DESIGN :

(i) Split plot (ii) 6 main-plots/block, 3 sub-plots/main-plot. (iii) 4. (iv) (a) 12′×20′. (b) 12′×18′. (v) One row on each side of the main-plot. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Nil. (iii) Germination, pod yield and shelling %. (iv) (a) 1953—contd. (b) and (c) No. (v) (a) Sabour and Purnea. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1063 lb./ac. (ii) (a) 513.1 lb./ac. (b) 309.7 lb./ac. (iii) Main effects of M and P are highly significant. Interaction M×P is significant. (iv) Av. yield of pod in lb./ac.

	M_1	M_2	Mean	P_1	P_2	P_3
R_1	776	1586	1181	1510	1066	966
R_2	750	1329	1039	1044	940	1134
R_3	810	1130	670	1183	742	985
Mean	778	1348	1063	1246	916	1028
P_1	825	1666				
P_2	633	1199				
P_3	877	1180				

S.E. of difference of two

1. M marginal means = 120.9 lb./ac.
2. R marginal means = 148.1 lb./ac.
3. P marginal means = 89.4 lb./ac.
4. P means at the same level of M = 126.4 lb./ac.
5. P means at the same level of R = 154.8 lb./ac.
6. M means at the same level of P = 159.0 lb./ac.
7. R means at the same level of P = 194.7 lb./ac.

Crop :- Groundnut. **Ref :- Bh. 56(22).**

Site :- Bot. Sub-Stn., Dumka. **Type :- 'C'.**

Object :—To find out the optimum spacing for Groundnut.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 23 to 26.6.1956. (iv) (a) One ploughing by tractor and 3 plougings by *desi* plough. (b) Dibblings. (c) N.A. (d) As per treatment. (e) 1. (v) Nil. (vi) Local (early). (vii) Unirrigated. (viii) Weeding and interculturing from 2 to 4.8.1956. (ix) 50.71″. (x) 12 to 28.1.1956.

2. TREATMENTS :

Main-plot treatments :

4 row spacings R_1=9″, R_2=12″, R_3=15″ and R_4=18″.

Sub-plot treatments :

3 plant spacings : P_1=4″, P_2=6″ and P_3=9″.

3. DESIGN :

(i) Split plot. (ii) (a) 4 main-plots/block ; 3 sub-plots/main plot. (b) N.A. (iii) 4. (iv) (a) 16½′×24′ for R_1, 17′×24′ for R_2, 17½′×24′ for R_3 and 18′×24′ for R_4. (b) 15′×18′. (v) One row on either side and 3′ at either end of each row. (vi) Yes.

4. GENERAL :

(i) Medium. (ii) Nil. (iii) Germination, growth, disease and pest incidence ; flowering, pod yield and shelling %. (iv) (a) 1955—contd. (b) and (c) No. (v) (a) Sabour and Purnea. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1520 lb./ac. (ii) (a) 252.1 lb./ac. (b) 253.4 lb /ac. (iii) None of the effects is significant. (iv) Av. yield of pod in lb./ac.

	R_1	R_2	R_3	R_4	Mean
P_1	1431	1265	1198	1794	1422
P_2	1665	1416	1582	1706	1592
P_3	1737	1675	1302	1473	1546
Mean	1611	1452	1360	1658	1520

S.E. of difference of two

1. R marginal means = 102.9 lb./ac.
2. P marginal means = 89.6 lb./ac.
3. P means at the same level of R = 179.2 lb./ac.
4. R means at the same level of P = 178.9 lb./ac.

Crop :- Groundnut. **Ref :- Bh. 55(53).**

Site :- Bot. Sub-Stn., Dumka. **Type :- 'C'.**

Object :—To find out the optimum spacing for Groundnut.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Rahar*. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 1 to 4.7.1955. (iv) (a) 1 ploughing by tractor and 3 ploughings by *desi* plough. (b) Dibbling. (c) and (d) As per treatments. (e) 1. (v) Town compost at 3 tons/ac. (vi) Local (early). (vii) Unirrigated. (viii) One interculturing by hand hoe and two weedings. (ix) 27.87". (x) 20.12.1955.

2. TREATMENTS and 3. DESIGN :

Same as in expt no. 56(22) on page 872.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Germination, date of flowering, yield and shelling %. (iv) (a) 1955—contd. (b) and (c) No. (v) (a) Sabour and Purnea. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 1773 lb./ac. (ii) (a) 339.0 lb./ac. (b) 239.2 lb./ac. (iii) Only P effect is significant. (iv) Av. yield of pod in lb./ac.

	R_1	R_2	R_3	R_4	Mean
P_1	1913	1742	1753	2126	1884
P_2	1690	1768	2038	1701	1799
P_3	1836	1561	1582	1561	1635
Mean	1813	1690	1791	1796	1773

S.E. of difference of two

1. R marginal means = 138.4 lb./ac.
2. P marginal means = 84.6 lb./ac.
3. P means at the same level of R = 169.2 lb./ac.
4. R means at the same level of P = 195.6 lb /ac.

Crop :- Groundnut. **Ref :- Bh. 57(6).**

Site :- Bot. Sub-Stn., Dumka. **Type :- 'CM'.**

Object :—To find out the best plant spacing and manurial schedules for highest yield of Groundnut.

1. BASAL CONDITIONS :

(i) Nil. (b) *Til.* (c) Night soil. (ii) (a) and (b) N.A. (iii) 14 to 20.7.1957. (iv) (a) Ploughing. (b) Dibbling. (c) N.A. (d) As per treatments. (e) 1. (v) Nil. (vi) Local. (vii) Unirrigated. (viii) Weeding. (ix) 24.35". (x) 10.12.1957 to 2.1.1958.

2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 3 levels of N as A/S : $N_0=0$, $N_1=25$ and $N_2=50$ lb./ac.
(2) 3 levels of P_2O_5 : $P_0=0$, $P_1=25$ and $P_2=50$ lb./ac.
(3) 3 plants spacings : $S_1=4''$, $S_2=6''$ and $S_3=9''$.

3. DESIGN :

(i) 3^3 partially confd. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 12'×18'. (b) 10'×12'. (v) 1'×3'. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) None. (iii) Dates of flowering and yield of groundnut. (iv) (a) to (c) No. (v) (a) Sabour, Purnea and Kanke. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 569 lb./ac. (ii) 126.9 lb./ac. (iii) No effect is significant. (iv) Av. yield of pod in lb./ac.

	N_0	N_1	N_2	Mean	P_0	P_1	P_2
S_1	630	518	667	605	462	597	754
S_2	638	416	521	525	502	564	509
S_3	443	591	698	578	579	576	578
Mean	570	508	629	569	514	579	614
P_0	459	476	609				
P_1	578	505	653				
P_2	675	542	625				

S.E. of any marginal mean = 21.2 lb./ac.
S.E. of body of any table = 36.6 lb./ac.

Crop :- Groundnut. **Ref :- Bh. 57(2).**

Site :- Bot Sub-Stn., Kanke. **Type :- 'CM'.**

Object :—To find out optimum dose of N and P and best spacing for Groundnut.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 27.7.1957. (iv) (a) Three ploughings by *desi* plough and beaming by heavy wood beam. (b) In furrows opened by Dutch hoe. (c) N.A. (d) As per treatments. (e) 1. (v) Nil. (vi) *Giriak* (medium). (vii) Nil. (viii) Hoeing by Dutch hoe and 3 weedings. (ix) 37.91". (x) N.A.

2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 3 levels of N as A/S : $N_0=0$, $N_1=25$ and $N_2=50$ lb./ac.
(2) 3 levels of P_2O_5 as Super : $P_0=0$, $P_1=25$ and $P_2=50$ lb./ac.
(3) 3 plant spacings : $S_0=4''$, $S_1=6''$ and $S_2=10''$.

Spacing between rows is 1'.

3. DESIGN :

(i) 3^3 partially confd. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 15′×15′. (b) 13′×13′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Not good. (ii) Affected by *tikka* and cater-piller— 2 to 3 sprays copper fungicides and Bordeaux mixture, dusting with BHC and Endrine sprayed. (iii) Pod yield. (iv) (a) 1957. (b) and (c) Yes. (v) (a) Sabour. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 813 lb./ac. (ii) 314.7 lb./ac. (iii) S effect and interaction N×S are significant. (iv) Av. yield of pod in lb./ac.

	N_0	N_1	N_2	Mean	P_0	P_1	P_2
S_0	1038	1012	709	920	983	733	1043
S_1	891	636	878	802	827	827	752
S_2	704	746	701	717	690	695	765
Mean	878	798	764	813	833	752	853
P_0	857	818	825				
P_1	826	741	688				
P_2	949	834	776				

S.E. of any marginal mean = 52.4 lb./ac.
S.E. of body of any table = 90.8 lb./ac.

Crop :-Groundnut *(Kharif)*. **Ref :- Bh. 58(247)**

Site :- Agri. Res. Instt., Kanke. **Type :- 'CM'.**

Object :—To find out optimum dose of N, P and best spacing for Groundnut.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Kulthi*. (c) Nil. (ii) (a) Sandy loam. (b) Refer soil analysis, Kanke. (iii) 22, 23.6.1958. (iv) (a) 2 ploughings by *desi* Plough and beaming by heavy wooden beam. (b) Line sowing (dibbling) (c) 8 srs /ac. (d) As per treatments. (e) 1 to 2. (v) Nil. (vi) *Giriak*. (vii) Unirrigated. (viii) 3 weedings and 3 hoeings. (ix) 30.5′. (x) 24.11.1958 to 1.12.1958.

2. TREATMENTS :

All combinations of (1), (2) and (3).

(1) 3 levels of N as A/S : $N_0=0$, $N_1=25$ and $N_2=50$ lb./ac.
(2) 3 levels of P_2O_5 as Super : $P_0=0$, $P_1=25$ and $P_2=50$ lb./ac.
(3) 3 plant spacings : $S_1=4''$, $S_2=6''$ and $S_3=9''$.

Spacing between rows is 1′.

3. DESIGN :

(i) 3^3 partial confd. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 12′×18′. (b) 10′×12′. (v) 1′×3′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Attack of heavy cater piller—D.D.T. and Endrine were sprayed. (iii) Yield of pod. (iv) (a) to (c) N.A. (v) (a) and (b) N A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1767 lb./ac. (ii) 296.3 lb./ac. (iii) N and S effects are highly significant. Interaction P×S is significant. (iv) Av. yield of pod in lb./ac.

	N_0	N_1	N_2	Mean	P_0	P_1	P_2
S_1	1801	1715	1513	1676	1738	1626	1665
S_2	1855	1770	1532	1719	1665	1719	1773
S_3	2236	1766	1719	1907	1801	2166	1754
Mean	1964	1750	1588	1767	1735	1837	1731
P_0	1828	1723	1653				
P_1	2077	1847	1587				
P_2	1987	1680	1525				

S.E. of any marginal mean = 49.4 lb./ac.
S.E. of body of any table = 85.5 lb./ac.

Crop :- Groundnut *(Kharif)*. **Ref :- Bh. 59(108).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'CM'.**

Object :—To find out optimum dose of N and P and best spacing for Groundnut.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Red laterite. (b) Refer soil analysis, Kanke. (iii) N.A. (iv) (a) 2 ploughins. (b) Dibbling. (c) 80 lb./ac. (d) As per treatments. (e) N.A. (v) Nil. (vi) Local. (vii) Unirrigated. (viii) to (x) N.A.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 58(247) on page 875.

4. GENERAL :

(i) Good. (ii) Slight cater-piller attack—Endrine sprayed. (iii) Pod yield. (iv) (a) 1957 - contd. (b) No. (c) Nil. (v) (a) and (b) N.A, (vi) and (vii) Nil.

5. RESULTS :

(i) 1425 lb./ac. (ii) 185.0 lb./ac. (iii) Main effects and two factor interactions are highly significant. (iv) Av yield of pod in lb./ac.

	N_0	N_1	N_2	Mean	P_0	P_1	P_2
S_1	1331	1794	1435	1520	1356	1348	1857
S_2	1399	1481	1471	1450	1342	1507	1501
S_3	1333	1244	1342	1306	1270	1250	1399
Mean	1354	1506	1416	1425	1323	1368	1586
P_0	1251	1348	1369				
P_1	1307	1342	1456				
P_2	1505	1828	1424				

S.E. of any marginal mean = 30.8 lb./ac.
S.E. of body of any table = 53.4 lb./ac.

Crop :- Groundnut *(Kharif)*. **Ref :- Bh. 59(103).**

Site :- Govt. Agri. Farm, Nawadah. **Type :- 'CM'.**

Object :—To find out optimum dose of N and P and best spacing for groundnut.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Loam. (b) N.A. (iii) 18, 22.6.1959. (iv) (a) 4 ploughings. (b) Line sowing. (c) 30 srs/ac. (d) As per treatments. (e) N.A. (v) Nil. (vi) Local. (vii) and (viii) Nil. (ix) 21.22". (x) 12 to 22.12.1959:

2. TREATMENTS :

Same as in expt. no. 58(247) on page 875.

3. DESIGN :

(i) 3^3 partially confd. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 21'×7'. (b) 21'×5'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Pod yield. (iv) (a) 1959—N.A. (b) No. (c) Nil. (v) (a) Sabour. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 2176 lb./ac. (ii) 352.5 lb./ac. (iii) Main effect of P and interaction S×N×P are highly significant ; interaction S×N is significant. (iv) Av. yield of pod in lb./ac.

	N_0	N_1	N_2	Mean	P_0	P_1	P_2
S_1	2121	2312	2383	2272	1672	2512	2632
S_2	2383	2259	1761	2134	1761	2312	2330
S_3	2099	2205	2063	2122	1689	2206	2472
Mean	2201	2259	2069	2176	1707	2343	2478
P_0	1814	1725	1583				
P_1	2405	2401	2223				
P_2	2383	2650	2401				

S.E. of any marginal mean = 58.8 lb./ac.
S.E. of body of any table = 101.8 lb./ac.

Crop :- Groundnut *(Kharif)*. **Ref :- Bh. 58(317).**

Site :- Agri. Res. Instt., Pusa. **Type :- 'CM'.**

Object :—To find out optimum dose of N and P and best spacing for Groundnut.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Rahar*. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 7 to 9.7.1958. (iv) (a) 3 ploughings. (b) By dibbling. (c) 30 srs/ac. (d) Rows 1' apart. (e) 1. (v) Nil. (vi) Local *Giriak* (medium). (vii) Unirrigated. (viii) 2 weedings and 2 earthings. (ix) 26.75". (x) 28.12.1958 to 6.1.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 58(247) on page 875.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Pod yield. (iv) (a) to (c) No. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1932 lb./ac. (ii) 58.5 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of pod in lb./ac.

	N_0	N_1	N_2	Mean	P_0	P_1	P_2
S_1	1933	2008	1957	1966	2015	2051	1833
S_2	1882	2069	2045	1999	2120	1909	1966
S_3	1797	1930	1763	1830	1987	1745	1758
Mean	1871	2002	1922	1932	2041	1902	1852
P_0	1893	2154	2075				
P_1	1851	1936	1918				
P_2	1868	1918	1772				

S.E. of any S marginal means = 9.8 lb./ac.
S.E. of body of any table = 16.9 lb./ac.

Crop :- Groundnut ***(Kharif).*** **Ref :- Bh. 59(131).**

Site :- Agri. Res. Instt., Pusa. **Type :- 'CM'.**

Object :—To find out the optimum dose of N, P and best spacing for Grounduut.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Rahar*. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 7 to 14.7.1959. (iv) (a) 3 times ploughed by mould board plough before applying lime and once ploughed after that. (b) Dibbling by *khurpi*. (c) 30 srs/ac. (d) As per treatments. (e) 1 seed/hole. (v) Lime at ½ tons/ac. (vi) *Giriak* (Local). (vii) Unirrigated. (viii) 2 weedings. (ix) 28.95". (x) 24.12.1959 to 2.1.1960.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 58(247) on page 875.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Pod yield. (iv) (a) 1958—contd. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1156 lb./ac. (ii) 289.7 lb./ac. (iii) Main effect of S alone is highly significant. (iv) Av. yield of pod in lb./ac.

	N_0	N_1	N_2	Mean	P_0	P_1	P_2
S_1	1187	1214	1285	1229	1091	1265	1331
S_2	1184	1250	1206	1213	1201	1239	1201
S_3	1023	1082	972	1026	1021	1023	1032
Mean	1131	1182	1154	1156	1104	1175	1188
P_0	1091	1084	1138				
P_1	1127	1312	1087				
P_2	1176	1150	1238				

S.E. of any marginal mean = 48.3 lb./ac.
S.E. of the body of any table = 83.6 lb./ac.

Crop :- Groundnut *(Kharif)*. **Ref :- Bh. 57(32).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'CM'.**

Object :—To find out the optimum dose of N, P and best spacing for Groundnut.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 7.7.1957. (iv) (a) 4 ploughings. (b) Dibbling with *khurpi*. (c) 80 lb./ac. (d) As per treatments. (e) 1. (v) Nil. (vi) *Giriak* (Local). (vii) Unirrigated. (viii) Hoeing and weeding once. (ix) and (x) N.A.

2 TREATMENTS :

All combinations of (1), (2) and (3)

(1) 3 levels of N as A/S : $N_0=0$, $N_1=25$ and $N_2=50$ lb./ac.
(2) 3 levels of P_2O_5 as Super : $P_0=0$, $P_1=25$ and $P_2=50$ lb./ac.
(3) 3 plant spacings : $S_1=4''$, $S_2=6''$ and $S_3=9''$.

Spacing between rows is 1′.

3. DESIGN :

(i) 3^3 partially confd. (ii) (a) 9. (b) 108′×54′. (iii) 4. (iv) (a) 18′×12′. (b) 12′×10′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Dates of germination, flowering, yield of groundnut. (iv) (a) 1957—1959. (b) No. (c) Nil. (v) (a) Pusa and Kanke. (b) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 569 lb./ac. (ii) 253.4 lb./ac. (iii) No effect is significant. (iv) Av. yield of pod in lb./ac.

	N_0	N_1	N_2	Mean	P_0	P_1	P_2
S_1	630	518	667	604	460	597	754
S_2	638	416	521	525	502	564	509
S_3	443	592	698	578	579	576	578
Mean	570	508	629	569	514	578	614
P_0	459	476	609				
P_1	578	505	653				
P_2	675	542	625				

S.E. of any marginal mean = 42.2 lb./ac.
S.E. of body of any table = 73.2 lb./ac.

Crop :- Groundnut. *(Kharif)*. **Ref :- Bh. 58(177).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'CM'.**

Object :—To find out optimum dose of N and P and best spacing for Groundnut.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 26.6.1958. (iv) (a) 3 ploughings. (b) Dibbling by *khurpi* (c) 80 lb./ac. (d) Row to row 1′. (e) N.A. (v) Nil. (vi) Local. (vii) Unirrigated (viii) N.A. (x) 31.78″. (x) 30.12.1958.

2. TREATMENTS and 3. DESIGN :

Same as in expt. 57(32) above.

4. GENERAL :

(i) and (ii) N.A. (iii) Pod yield. (iv) (a) 1957—1959. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1518 lb./ac. (ii) 226.6 lb./ac. (iii) Main effect of N, interactions S×P and S×N×P are all highly significant. (iv) Av. yield of pod in lb./ac.

	N_0	N_1	N_2	Mean	P_0	P_1	P_2
S_1	1647	1357	1478	1494	1534	1429	1519
S_2	1622	1466	1346	1478	1521	1437	1476
S_3	1729	1618	1402	1583	1626	1585	1538
Mean	1666	1480	1409	1518	1560	1484	1511
P_0	1774	1427	1480				
P_1	1579	1485	1387				
P_2	1645	1528	1359				

S.E. any marginal mean = 37.8 lb./ac.
S.E. of body of any table = 65.4 lb./ac.

Crop :- Groundnut. *(Kharif).* **Res. Bh. 59(106).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'CM'.**

Object :—To find out optimum dose of N and P and best spacing for Groundnut.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 5,6.7.1959. (iv) (a) 4 ploughings. (b) Dibbling with *khurpi*. (c) 80 lb./ac. (d) As per treatments (e) N.A. (v) Nil. (vi) Local. (vii) Unirrigated. (viii) 1 hoeing and weeding. (ix) 37.21". (x) 1.12.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 57(32) on page 879.

4. GENERAL :

(i) Good. (ii) Attack of cater-piller and white ant– control measures N.A. (iii) Yield of pod. (iv) (a) 1957—1959. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1410 lb./ac. (ii) 368.6 lb./ac. (iii) Main effects of N and S are significant. (iv) Av. yield of pod in lb./ac.

	N_0	N_1	N_2	Mean	P_0	P_1	P_2
S_1	1338	1237	1279	1285	1303	1268	1283
S_2	1719	1563	1536	1606	1696	1552	1571
S_3	1544	1295	1178	1339	1295	1482	1240
Mean	1534	1365	1331	1410	1431	1434	1365
P_0	1668	1365	1260				
P_1	1642	1365	1474				
P_2	1470	1365	1260				

S.E. of any marginal = 61.4 lb./ac.
S.E. of body of any table = 106.4 lb./ac.

Crop :- Groundnut *(Kharif)*. **Ref :- Bh. 59(115).**

Site :- Soil Cons. Res. Stn., Jalalgarh. **Type :- 'D'.**

Object :—To study the effect of spraying Bordeaux mixture against *tikka* disease of Groundnut.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 27.7.1959. (iv) (a) 6 ploughings. (b) Line sowing. (c) 30 srs./ac. (d) Row to row 1½′. (e) N.A. (v) Liming of the soil. (vi) Local. (vii) Unirrigated. (viii) Earthing up. (ix) N.A. (x) 12.1.1960.

2. TREATMENTS :

4 sprays of Bordeaux mixture : $T_1=1$, $T_2=2$, $T_3=3$ and $T_4=4$ sprays.
Amount of chemical sprayed—N.A.

3. DESIGN :

(i) R.B D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 18′×36′. (b) 16′×34′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of pod. (iv) (a) 1959—1962. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1505 lb./ac. (ii) 164.6 lb./ac. (iii) Treatemnt differences are not significant. (iv) Av. yield of groundnut in lb./ac.

Treatment	T_1	T_2	T_3	T_4
Av. yield	1604	1550	1522	1344

S.E./mean= 67.2 lb./ac.

Crop :- Groundnut *(Kharif)*. **Ref :- Bh. 59(114).**

Site :- Soil Cons. Res. Stn., Jalalgarh. **Type :- 'D'.**

Object :—To test the effect of different fungicides against *tikka* disease of Groundnut.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 26.7.1959. (iv) (a) 6 ploughings. (b) Line sowing. (c) 30 srs./ac. (d) Row to row 1½′. (e) N.A. (v) Liming of the soil. (vi) Local. (vii) Unirrigated. (viii) Earthing up. (ix) N A. (x) 13.1.1960.

2. TREATMENTS :

3 fungicides and a control : T_1=Control, T_2=Bordeaux mixture, T_3=Colloidal Sulphur and T_4=Diathene.

3. DESIGN :

(i) R.B D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 18′×36′. (b) 16′×34′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Attacked by hairy cater piller—spraying of aluminium no. 2. (iii) Yield of pod. (iv) (a) 1959—1962. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) Nil. (vii) Heavy rains during August and September, 1959.

5. RESULTS :

(i) 1142 lb./ac. (ii) 183.4 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of groundnut in lb./ac.

Treatment	T_1	T_2	T_3	T_4
Av. yield	1207	1097	1124	1138

S.E./mean = 74.9 lb./ac.

Crop :- Mustard *(Rabi)*. **Ref :- Bh. 58(SFT).**

Centre :- Champaran (c.f.). Type :- 'M'.

Object :—Type A—To study the response of Mustard to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Alluvial. (iii) Nil. (iv) and (v) N.A. (vi) October—November 1958. (vii) to (ix) N.A. (x) February—March 1959.

2. TREATMENTS :

o =Control (no manure).
n =20 lb./ac. of N as A/S.
p =20 lb./ac. of P_2O_5 as Super.
np =20 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super.
k =20 lb /ac. of K_2O as Mur. Pot.
nk =20 lb./ac. of N as A/S+20 lb./ac. of K_2O as Mur. Pot.
pk =20 lb./ac. of P_2O_5 as Super+20 lb./ac. of K_2O_5 as Mur. Pot.
npk=20 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super + 20 lb./ac. of K_2O as Mur. Pot.

3. DESIGN :

(i) and (ii) The district has been divided into four agriculturally homogenous zones and one field assistant posted in each zone. The field assistant conducts the trials in one Revenue circle or thana in the zone and the circle/thana is changed once in two years within the same zone. Each field assistant is required to conduct 31 trials in a year, 8 on a *kharif* cereal, 8 on *rabi* cereal, 8 on cash crops, 4 on an oilseed crop and 3 on a leguminous crop. Half the number of trials conducted are of type A and the other half of type B on crops other than the legumes. The three trials on legumes are of type C. Residual effects of phosphate application are studied on type C trials in two out of the four zones in each district every year. The experiments are laid out in randomly loctated field in randomly selected villages in each of the 4 zones at the rate of one experiment per village. (iii) (a) 1/40 ac. (b) 1/80 ac. (iv) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Seed yield. (iv) (a) 1958—contd. (b) No. (c) Nil. (v) As per design. (vi) and (vii) Nil.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	222	148	—16	64.2	8	– 8	8	25	15.6

Control yield = 288 lb./ac. and no. of trials = 6.

Crop :- Mustard *(Rabi)*. **Ref :- Bh. 59(SFT).**

Centre :- Champaran (c.f.). Type :- 'M'.

Object :—Type A—To study the response of Mustard to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 58(SFT) type A above conducted at Champaran.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	156	82	—58	31.3	33	—16	33	8	45.3

Control yield = 346 lb./ac. and no. trials = 8

Crop :- Mustard *(Rabi)*. **Ref :- Bh. 59(SFT).**

Centre :- Gaya (c.f.). **Type :- 'M'.**

Object :—Type A—To study the response of Mustard to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 58(SFT) type A on page 882 conducted at Champaran.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	189	82	33	53.5	—8	—33	25	8	45.3

Control yield = 543 lb./ac. and no. of trials = 4.

Crop :- Mustard *(Rabi)*. **Ref :- Bh. 59(SFT).**

Centre :- Monghyr (c.f.). **Type :- 'M'.**

Object :—Type A—To study the response of Mustard to levels of N, P and K applied individually and in conbinations.

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 58(SFT) type A on page 882 conducted at Champaran.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	173	58	8	23.9	33	—8	16	—16	14.0

Control = 724 lb./ac. and no. of trials = 5

Crop :- Mustard *(Rabi)*. **Ref :- Bh. 58(SFT).**

Centre :- Muzaffarpur (c.f.). **Type :- 'M'.**

Object :—Type A—To study the response of Mustard to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 58(SFT) type A on page 882 conducted at Champaran.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	173	115	33	43.6	25	25	—25	33	23.9

Control yield = 518 lb./ac. and no. of trials = 4.

Crop :- Mustard *(Rabi)*. **Ref :- Bh. 59(SFT).**

Centre :- Muzaffarpur (c.f.). **Type :- 'M'.**

Object :—Type A—To study the response of Mustard to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 58(SFT) type A on page 882 conducted at Champaran.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	91	58	25	13.2	25	0	58	33	28.8

Control yield = 395 lb./ac. and no. of trials = 4.

Crop :- Mustard. **Ref :- Bh. 58(SFT).**

Centre :- Patna (cf.). **Type :- 'M'.**

Object :—Type A—To study the response of Mustard to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Other alluvial. (iii) Nil. (iv) and (v) N.A. (vi) October—November 1258. (vii) to (ix) N.A. (x) February-March 1959.

2. TREATMENTS to 4. GENERAL :

Same as in experiment no. 58(SFT) type A on page 882 conducted at Champaran .

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	255	222	99	96.3	91	8	58	49	42.0

Control yield=667 lb./ac. and no trails=4.

Crop :- Mustard. **Ref :- Bh. 58(SFT).**

Centre :- Purnea (c.f.). **Type :- 'M'.**

Object :—Type A :—To study the response of Mustard to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Other alluvial. (iii) Nil. (iv) and (v) N.A. (vi) October-November 1958. (vii) to (ix) N.A. (x) February-March 1959.

2. TREATMENTS to 4. GENERAL :

Same in experiment no. 58(SFT) type A on page 882 conducted at Champaran.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	49	58	41	7.4	8	0	0	8	4.1

Control yield=502 lb./ac. and no. of trials=7.

Crop :- Mustard. **Ref :- Bh. 59(SFT).**

Centre :- Purnea (c.f.). **Type :- 'M'.**

Object :—Type A :—To study the response of Mustard to levels of N, P and K. applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Other Alluvial. (iii) Nil. (iv) and (v) N.A. (vi) October—November 1959. (vii) to (ix) N.A. (x) February—March 1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type A on page 882 conducted at Champaran.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	99	107	33	21.4	41	—16	—8	—8	7.4

Control yield=370 lb./ac. and no. of trials=8.

Crop :- Mustard. **Ref -: Bh. 59(SFT).**

Centre :- Ranchi (c.f.). **Type :- 'M'.**

Object :—Type A—To study the response of Mustard to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Red. (iii) Nil. (iv) and (v) N.A. (vi) October—November 1959. (vii) to (ix) N.A. (x) February—March 1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58 (SFT) type A on page 882 conducted at Champaran.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	189	140	16	11.5	91	16	8	16	12.3

Control yield=642 lb./ac. and no. of trials=6.

Crop :- Mustard. **Ref :- Bh. 58(SFT).**

Centre :- Santhal Paraganas (c.f.). **Type :- 'M'.**

Object :—Type A—To study the response of Mustard to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Red (iii) Nil. (iv) and (v) N.A. (vi) October—November 1958. (vii) to (ix) N.A. (x) February—March 1959.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type A on page 882 conducted at Champaran.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E
Av. response in lb./ac.	115	165	58	6.6	8	16	25	—16	7.4

Control yield = 691 lb./ac. and no. of trials = 4.

Crop :- Mustard. **Ref :- Bh. 59(SFT).**

Centre :- Santhal Paraganas (c.f.). **Type :- 'M'.**

Object :—Type A—To study the response of Mustard to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Red. (iii) Nil. (iv) and (v) N.A. (vi) October—November 1959. (vii) to (ix) N.A. (x) February—March 1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(SFT) type A on page 882 conducted at Champaran.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	82	49	8	8.2	25	—16	—8	16	4.1

Control yield = 815 lb./ac. and no. of trials 6.

Crop :- Mustard *(Rabi)*. **Ref :- Bh. 58(SFT).**

Centre :- Shahabad (c.f.). **Type :- 'M'.**

Object :—Type A—To study the response of Mustard to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 58(SFT) type A on page 882 conducted at champaran.

5. RESULTS :

Effect	n	p	k	S E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	123	74	66	29.6	16	25	25	—8	17.3

Control yield = 189 lb./ac. and no. of trials = 4.

Crop :- Mustard *(Rabi)*. **Ref :- Bh. 59(SFT).**

Centre :- Shahabad (c.f.).. **Type :- 'M'.**

Object :—Type A—To study the response of Mustard to levels of N, P and K applied individually and in combinations.

1, BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 58(SFT) type A on page 882 conducted at Champaran.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	132	156	—99	28.8	33	—33	41	8	11.5

Control yield = 288 lb./ac. and no. of trials = 6.

Crop :- Mustard *(Rabi)*. **Ref :- Bh. 59(SFT).**

Centre :- Gaya (c.f.). **Type :- 'M'.**

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses for Mustard.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Alluvial. (iii) Nil. (iv) and (v) N.A. (vi) October—November 1959. (vii) to (ix) N.A. (x) February—March 1960.

2. TREATMENTS:

0 = Control (no manure).
n_1' = 20 lb./ac. of N as Urea.
n_2' = 40 lb./ac. of N as Urea.
n_1'' = 20 lb./ac. of N as A/S/N.
n_2'' = 40 lb./ac. of N as A/S/N.
n_1''' = 20 lb./ac. of N as C/A/N.
n_2''' = 40 lb./ac. of N as C/A/N.

3. DESIGN:

(i) and (ii) The district has been divided into four agriculturally homogeneous zones and one field assistant posted in each zone. The field assistant conducts the trials in one Revenue circle or thana in the zone and the circle/thana is changed once in two years within the same zone. Each field assistant is required to conduct 31 trials in a year, 8 on *kharif* cereal, 8 on *rabi* cereal, 8 on cash crops, 4 on an oilseed crop and 3 on a leguminous crop. Half the number of trials conducted are of type A and the other half of type B on crops other than the legumes. The three trials on legumes are of type C. Residual effects of phosphate application are studied on type C trial in two out of the four zones in each district every year. The experiments are laid out in randomly located fields in randomly selected villages in each of the 4 zones at the rate of one experiment per village. (iii) (a) 1/40 ac. (b) 1/80 ac. (iv) Yes.

4. GENERAL:

(i) Normal. (ii) Nil. (iii) Grain yield. (iv) (a) 1958—contd. (b) No. (c) Nil. (v) As per design. (vi) and (vii) Nil.

5. RESULTS:

Treatment	0	n_1'	n_2'	n_1''	n_2''	n_1'''	n_2'''
Av. yield	518	650	848	625	790	667	905

G.M.= 715 lb./ac. ; S.E.=30.8 lb./ac. and no. of trials= 3.

Crop :- Mustard *(Rabi)*. **Ref :- Bh. 59(SFT).**

Centre :- Monghyr (c.f.). Type :- 'M'.

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses for Mustard.

1. BASAL CONDITIONS to 4. GENERAL:

Same as in expt. no. 59(SFT) type B on page 886 conducted at Gaya.

5. RESULTS:

Treatment	0	n_1'	n_2'	n_1''	n_2''	n_1'''	n_2'''
Av. yield	955	1193	1284	1086	1317	1234	1407

G.M.=1211 lb./ac. ; S.E.=68.7 lb./ac. and no. of trials=2.

Crop :- Mustard *(Rabi)*. **Ref :- Bh. 59(SFT).**

Centre :- Patna (c.f.). Type :- 'M'.

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses for Mustard.

1. BASAL CONDITIONS to 4. GENERAL:

Same as in expt no. 59(SFT) type B on page 886 conducted at Gaya.

5. RESULTS:

Treatment	0	n_1'	n_2'	n_1''	n_2''	n_1'''	n_2'''
Av. yield	568	831	913	749	782	782	872

G.M.=785 lb./ac. ; S.E.=27.9 lb./ac. and no. of trials=6.

Crop :- Mustard *(Rabi)*. **Ref :- Bh. 59(SFT).**

Centre :- Purnea (c.f.). **Type :- 'M'.**

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses for Mustard.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Other alluvial. (iii) Nil. (iv) and (v) N.A. (vi) October—November 1959. (vii) to (ix) N.A. (x) February—March 1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type B on page 886 conducted at Gaya.

5. RESULTS :

Treatment	0	n_1'	n_2'	n_1''	n_2''	n_1'''	n_2'''
Av. yield	469	551	634	543	642	568	708

G.M.=588 lb./ac. S.E.=18.6 lb./ac. and no. of trials=6.

Crop :- Mustard *(Rabi)*. **Ref :- Bh. 59(SFT).**

Centre :- Santhal Paraganas (c.f.). **Type :- 'M'.**

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers and different doses for Mustard.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Red. (iii) Nil. (iv) (a) and (v) N.A. (vi) October—November 1959. (vii) to (ix) N.A. (x) February—March 1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 59(SFT) type B on page 886 conducted at Gaya.

5. RESULTS :

Treatment	0	n_1'	n_2'	n_1''	n_2''	n_1'''	n_2'''
Av. yield	1070	1119	1152	1094	1111	1111	1111

G.M. = 1110 lb./ac. ; S.E. = 12.2 lb./ac. and no. of trials=6

Crop :- Mustard *(Rabi)*. **Ref :- Bh. 59(SFT).**

Centre :- Shahabad (c.f). **Type :- 'M'.**

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses for Mustard.

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 59(SFT) type B on page 886 conducted at Gaya.

5. RESULTS :

Treatment	0	n_1'	n_2'	n_1''	n_2''	n_1'''	n_2'''
Av. yield	387	560	955	518	864	461	790

G.M. = 648 lb./ac, ; S.E. = 34.3 lb./ac. and no. of trials = 6.

Crop :- Niger ***(Rabi).*** **Ref :- Bh. 58, 59(1).**

Site :- Agri. Res. Instt., Kanke. **Type :- 'M'.**

Object :—To study the effect of N, P, K and lime on the yield of Niger.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Red laterite. (b) Refer soil analysis, Kanke. (iii) 1st week of Sept. (iv) (a) 4 ploughings by *desi* plough. (b) Line sowing. (c) N.A. (d) 1.5′ between rows. (e) N.A. (v) N.A. (vi) Local. (vii) Irrigated. (viii) Hoeing and weeding. (ix) and (x) N.A.

2. TREATMENTS :

4 manurial treatments : M_0=Control (no manure), M_1=3600 lb./ac. of lime, M_2=40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super+40 lb./ac. of K_2O as Mur. Pot. and $M_3=M_2+M_1$

Lime applied in 1958 only. Residual effect of lime studied in subsequent years.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 5. (iv) (a) 14′×20′. (b) 12′×18′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Nil. (iii) Yield of seed. (iv) (a) 1958—1960. (b) Yes. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

1958

(i) 195.4 lb./ac. (ii) 41.8 lb./ac. (iii) Treatment differences are highly significant. (iv) (a) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3
Av. yield	98.7	139.9	246.8	296.2

S.E./mean = 18.7 lb./ac.

1959

(i) 202.2 lb./ac. (ii) 59.7 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	M_0	M_1	M_2	M_3
Av. yield	25.5	79.8	312.7	390.8

S.E./mean = 26.7 lb./ac.

Crop :- Niger. **Ref :- Bh. 59(SFT).**

Centre :- Hazaribagh (c.f.). **Type :- 'M'.**

Object :—Type A—To study the response of Niger to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Red. (iii) Nil. (iv) Local. (v) N.A. (vi) July—August 1959. (vii) to (ix) N.A. (x) December 1959.

2. TREATMENTS :

o = Control (no manure).
n = 20 lb./ac. of N as A/S.
p = 20 lb./ac. of P_2O_5 as Super.
np = 20 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super.
k = 20 lb./ac. of K_2O as Mur. Pot.
nk = 20 lb./ac. of N as A/S+20 lb./ac. of K_2O as Mur. Pot.
pk = 20 lb./ac. of P_2O_5 as Super+20 lb./ac. of K_2O as Mur. Pot.
npk = 20 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super+20 lb./ac. of K_2O as Mur. Pot.

3. DESIGN :

(i) and (ii) The district has been divided into four agriculturally homogeneous zones and one field assistant posted in each zone. The field assistant conducts the trials in one Revenue circle or thana in the zone and the circle/thana is changed once in two years within the same zone. Each field assistant is required to conduct 31 trials in a year, 8 on *kharif* cereal, 8 on *rabi* cereal, 8 on cash crops, 4 on an oilseed crop and 3 on a leguminous crop. Half the number of trials conducted are of type A and the other half of type B on crops other than the legumes. The three trials on legumes are of type C. Residual effects of phosphate application are studied on type C trials in two out of the four zones in each district every year. The experiments are laid out in randomly located fields in randomly selected villages in each of the 4 zones at the rate of one experiment per village. (iii) (a) 1/40 ac. (b) 1/80 ac. (iv) Yes.

4. GENERAL :

(i) Poor. (ii) Nil. (iii) Grain yield. (iv) (a) to (c) Nil. (v) As per design. (vi) and (vii) Nil.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	82	74	16	9.1	41	8	0	0	15.6

Control yield = 181 lb./ac. and no. of trials = 3.

Crop :- Niger. **Ref :- Bh. 59(SFT).**

Centre :- Ranchi (c.f.). **Type :- 'M'.**

Object :—Type A—To study the response of Niger to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS to 4. GENERAL :

Same as in expt. no. 59(SFT) type A on page 889 conducted at Hazaribagh.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av yield in lb./ac.	74	58	0	7.4	16	8	8	8	16.5

Control yield = 115 lb./ac. and no. of trial = 7.

Crop :- Niger. **Ref :- Bh. 59(SFT).**

Centre :- Ranchi (c.f.). **Type :- 'M'.**

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses for Niger.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Red. (iii) Nil. (iv) Local. (v) N.A. (vi) July—August 1959. (vii) to (ix) N.A. (x) December 1959.

2. TREATMENTS :

0 = Control.
n'_1 = 20 lb./ac. of N as Urea.
n'_2 = 40 lb./ac. of N as Urea.
n''_1 = 20 lb./ac. of N as A/S/N.
n''_2 = 40 lb /ac. of N as A/S/N.
n'''_1 = 20 lb./ac. of N as C/A/N.
n'''_2 = 40 lb /ac. of N as C/A/N.
6 trials conducted with all treatments and 2 trials conducted with first 5 treatments.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 59(SFT) type A on page 889 conducted at Hazaribagh.

5. RESULTS :

Treatment	o	n_1	n'_2	n''_1	n''_2	n'''_1	n'''_2
Av. yield	115	165	214	156	222	189	214

G.M. = 182 lb./ac. ; S.E. = 7.0 lb./ac. and no. of trials = 6.

Treatment	o	n'_1	n'_2	n''_1	n''_2
Av. yield	91	148	197	148	181

G.M. = 153 lb./ac. ; S.E. = 16.3 lb./ac. and no. of trials = 2.

Crop :- Til. **Ref :- Bh. 54(25).**

Site :- Bot. Sub-Stn., Dumka. **Type :- 'M'.**

Object :—To find out the most advantageous manurial schedule for getting the highest yield of Til.

1. BASAL CONDITIONS :

(i) (a) No. (b) *Rahar*. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 31.8.1954. (iv) (a) One ploughing by tractor and 3 by *desi* plough. (b) Behind the plough. (c) N.A. (d) N.A. (e) 3 lb./ac. (v) Nil. (vi) Local (early). (vii) Unirrigated. (viii) Weeding and hoeing once. (ix) 23.14". (x) 24.12.1954.

2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 2 levels of N as A/S : $N_0=0$ and $N_1=40$ lb./ac.
(2) 2 levels of P_2O_5 as Super : $P_0=0$ and $P_1=50$ lb./ac.
(3) 2 levels of K_2O as Mur. Pot : $K_0=0$ and $K_1=40$ lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 10'×62'. (b) 6'×60'. (v) 2'×1' on two ends. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Nil. (iii) Germination, height of plant after flowering, no. and size of pod and seed yield. (iv) (a) 1953—1954. (b) and (c) No. (v) (a) Sabour and Purnea. (b) N.A. (vi) Nil. (vii) No reasons available for low yield.

5. RESULTS :

(i) 111 lb./ac. (ii) 126.2 lb./ac. (iii) No effect or interaction is significant (iv) Av. yield of Til in lb./ac.

	N_0	N_1	Mean	K_0	K_1
P_0	136	100	118	111	125
P_1	79	128	104	61	147
Mean	108	114	111	86	136
K_0	110	62			
K_1	105	167			

S.E. of any marginal mean = 31.6 lb./ac.
S.E. of body of any table = 44.6 lb./ac.

Crop :- Til. **Ref :- Bh. 55(51).**

Site :- Bot.Sub-Stn., Dumka. **Type :- 'M'.**

Object :—To estimate the manurial requirements of Til for maximum yield.

1. BASAL CONDITIONS :

(i) (a) No. (b) and (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 28.7.1955 to 2.8.1955. (iv) (a) Once ploughing by tractor and 3 by *desi* plough. (b) Behind the plough. (c) 3 lb./ac. (d) Rows 2′ apart (e)—. (v) Compost at 3 tons/ac. (vi) Local (early). (vii) Unirrigated. (viii) 2 weedings. (ix) 27.87″. (x) 3, 4. 11. 1955.

2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 3 levels of N as A/S : $N_1=20$, $N_2=30$ and $N_3=40$ lb./ac.
(2) 3 levels of P_2O_5 as Super : $P_1=20$, $P_1=30$ and $P_3=40$ lb./ac.
(3) 3 levels of K_2O as Mur. Pot : $K_1=20$, $K_2=30$ and $K_3=40$ lb./ac.

3. DESIGN :

(i) 3^3 partially confd. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 12′×28′. (b) 10′×24′. (v) 1′×2′. (vi) Yes.

4. GENERAL :

(i) Good, no lodging. (ii) Nil. (iii) Germination, disease incidence and seed yield. (iv) (a) 1955—contd. (b) and (c) No. (v) (a) Sabour and Purnea. (b) N.A. (vi) Nil. (vii) No reasons available for low yield.

5. RESULTS :

(i) 28 lb./ac. (ii) 14.0 lb./ac. (iii) Only interaction N×K is significant. (iv) Av. yield of seed in lb./ac.

	P_1	P_2	P_3	Mean	K_1	K_2	K_3
N_1	31	29	28	29	26	30	30
N_2	30	34	29	31	40	29	24
N_3	21	24	26	24	21	22	29
Mean	27	28	28	28	29	27	28
K_1	28	30	29				
K_2	25	32	24				
K_3	30	24	29				

S.E. of any marginal mean = 2.3 lb./ac.
S.E. of body of any table = 4.0 lb./ac.

Crop :- Til. **Ref :- Bh. 56(25).**
Site :- Bot. Sub-Stn., Dumka. **Type :- 'M'.**

Object :—To estimate the manurial requirements of Til for maximum yield.

1. BASAL CONDITIONS :

(i) (a No. (b) and (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 31.7.1956 to 3.8.1956. (iv) (a) One ploughing by tractor and 3 by *desi* plough. (b) Behind the plough. (c) 3 lb./ac. (d) 2′×1′. (e) N.A. (v) Nil. (vi) Local (early). (vii) Unirrigated. (viii) Thinning from 22 to 24.8.1956, Weeding and interculturing from 1 to 5.9.1956. (ix) 36.89″. (x) 26.10.1956.

2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 3 levels of N as A/S : $N_1=20$, $N_2=30$ and $N_3=40$ lb./ac.
(2) 3 levels of P_2O_5 as Super : $P_1=20$, $P_2=30$ and $P_3=40$ lb./ac.
(3) 3 levels of K_2O as Mur. Pot : $K_1=20$, $K_2=30$ and $K_3=40$ lb./ac.

3. DESIGN :

(i) 3^3 partially confd. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 26′×12′. (b) 24′×8′. (v) One row at each end of the plot ; path 3′. (vi) Yes.

4. GENERAL :

(i) Medium. (ii) Spraying with Guesarol 550 against Til cater-pillar. (iii) Germination, flowering data, disease incidence and seed yield. (iv) (a) 1953—contd. (b) and (c) No. (v) (a) Sabour and Purnea. (b) N.A. (vi) Nil. (vii) No reasons available for low yield.

5. RESULTS :

(i) 41 lb./ac. (ii) 10.9 lb./ac. (iii) Only N effect is highly significant. (iv) Av. yield of seed in lb./ac.

	P_1	P_2	P_5	Mean	K_1	K_2	K_3
N_1	40	45	51	45	48	45	43
N_2	36	34	42	37	35	40	37
N_3	42	41	42	42	47	41	36
Mean	39	40	45	41	44	42	39
K_1	36	47	48				
K_2	44	38	44				
K_3	38	35	43				

S.E. of any marginal mean = 1.8 lb./ac.
S.E. of body of any table = 3.1 lb./ac.

Crop :- Til. **Ref :- Bh. 57(8).**
Site :- Bot. Sub-Stn., Dumka. **Type -: 'M'.**

Object :—To estimate the manurial requirements of Til for maximum yield.

1. BASAL CONDITIONS :

(i) (a) No. (b) Fallow. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 29.7.1957. (iv) (a) Ploughing. (b) Behind the plough. (c) and (d) N.A. (e) 1. (v) Night soil. (vi) Local. (vii) Unirrigated. (viii) Thinning of plants and weeding. (ix) 27.53″. (x) 29.10.1957.

2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 3 levels of N as A/S : $N_0=0$, $N_1=20$, and $N_2=40$ lb./ac.
(2) 3 levels of P_2O_5 as Super : $P_0=0$, $P_1=20$ and $P_2=40$ lb./ac.
(3) 3 levels of K_2O as Mur. Pot. : $K_0=0$, $K_1=20$ and $K_2=40$ lb./ac.

3. DESIGN :

(i) 3^3 partially confd. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 10′×16′. (b) 6′×14′. (v) 2′×1′. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) No. (iii) Germination and seed yield. (iv) (a) No. (b) and (c) N.A. (v) to vii) Nil.

5. RESULTS :

(i) 411 lb./ac. (ii) 115.2 lb./ac. (iii) None of the effects is signicant. (iv) Av. yield of seed in lb./ac.

	P_0	P_1	P_2	Mean	K_0	K_1	K_2
N_0	404	407	418	410	439	378	412
N_1	425	422	414	420	408	420	432
N_2	397	407	407	404	382	416	412
Mean	409	412	413	411	410	405	419
K_0	407	424	398				
K_1	392	432	392				
K_2	428	381	448				

S.E. of any marginal mean = 19.2 lb./ac.
S.E. of body of any table = 33.2 lb./ac.

Crp :- Til *(Kharif)*. **Ref :- Bh. 59(130).**
Site :- Agri. Res. Instt., Pusa. **Type :- 'M'.**

Object :—To estimate manurial requirements of Til for maximum yield.

1. BASAL CONDITIONS :
(i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 29.7.1959. (iv) (a) 3 ploughings. (b) Behind the plough. (c) 3 lb./ac. (d) Rows 2′ apart. (e) —. (v) Nil. (vi) M 1-2 (medium). (vii) Nil. (viii) 2 weedings. (ix) 23.58″. (x) 7, 8.12.1959.

2. TREATMENTS :
Same as in expt. no. 57(8) on page 893.

3. DESIGN :
(i) 3^3 partially confd. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 12′×24′. (b) 8′×22′. (v) 2′×1′. (vi) Yes.

4. GENERAL :
(i) Good. (ii) Nil. (iii) Seed yield. (iv) (a) 1958—1961. (b) No. (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :
(i) 856 lb./ac. (ii) 414.7 lb./ac. (iii) Only effect of P is significant. (iv) Av. yield of seed in lb./ac.

	P_0	P_1	P_2	Mean	K_0	K_1	K_2
N_0	571	588	2118	1092	1295	1340	642
N_1	455	730	935	707	680	658	782
N_2	642	936	727	768	1162	645	497
Mean	556	751	1260	856	1046	881	640
K_0	730	879	1527				
K_1	430	863	1350				
K_2	507	512	903				

S.E. of any marginal mean = 69.1 lb./ac.
S.E. of body of any table = 119.7 lb./ac.

Crop :- Til *(Kharif)*. **Ref :- Bh. 55(187).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To estimate the manurial requirement of Til for maximum yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 20, 21.7.1957. (iv) (a) 2 ploughings. (b) Dibbling by *khurpi*. (c) 3 lb./ac. (d) 12″×6″. (e) 1. (v) Nil. (vi) N.A. (vii) Unirrigated. (viii) Hoeing and weeding done as usual. (ix) 14.60″. (x) 2.12.1957.

2. TREATMENTS :

Same as in expt. no. 55(51) on page 891.

3. DESIGN :

(i) 3^3 partially confd. (ii) (a) 9. (b) 84′×108′. (iii) 4. (iv) (a) 28′×12′. (b) 24′×10′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Dates of germination and flowering, disease incidence and yield per plot. (iv) (a) 1954—contd. (b) No. (c) Nil. (v) (a) Dumka and Purnea (b) No. (vi) and (vii) Nil.

5. RESULTS :

(i) 413 lb./ac. (ii) 14.5 lb./ac. (iii) No effect is significant. (iv) Av. yield of seed in lb./ac.

	P_1	P_2	P_3	Mean	K_1	K_2	K_3
N_1	364	384	449	399	374	394	429
N_2	377	443	422	414	394	405	443
N_3	435	422	425	427	434	422	425
Mean	392	416	432	413	401	407	432
K_1	360	408	435				
K_2	397	411	411				
K_3	418	429	449				

S.E. of any marginal mean = 68.8 lb./ac.
S.E. of body of any table = 119.2 lb./ac.

Crop :- Til *(Kharif)*. **Ref :- Bh. 56(67).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To estimate the manurial requirements of Til for maximum yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 22.7 1956. (iv) (a) 3 ploughings. (b) Behind the plough. (c) 3 lb./ac. (d) 1′×1′. (e) N.A. (v) Nil. (v) N.A. (vii) Unirrigated. (viii) Hoeing and weeding once. (ix) 43.50″. (x) 16.11.1956.

2. TREATMENTS :

Same as in expt. no. 55(51) on page 891.

3. DESIGN :

(i) 3^3 partially confd. (ii) (a) 9. (b) 108′×84′. (iii) 4. (iv) (a) 28′×12′. (b) 24′×10′. (v) Nil. (vi) Yes.

4, GENERAL :

(i) Poor. (ii) Nil. (iii) Til yield. (iv) (a) 1954—contd. (b) No. (c) None. (v) (a) Purnea and Dumka. (b) None. (vi) Nil. (vii) Low produce is ascribed to the low fertility of that area.

5. RESULTS :

(i) 67 lb./ac. (ii) 23.1 lb./ac. (iii) No effect is significant. (iv) Av. yield of seed in lb./ac.

	P_1	P_2	P_3	Mean	K_1	K_2	K_3
N_1	70	61	68	66	80	59	59
N_2	78	64	69	70	66	65	79
N_3	63	62	67	64	60	62	71
Mean	70	63	68	67	69	62	70
K_1	73	56	80				
K_2	65	66	57				
K_3	74	65	68				

S.E. of any marginal mean = 3.8 lb./ac.
S.E. of body of any table = 6.7 lb./ac.

Crop :- Til *(Kharif)*. **Ref :- Bh. 57(25).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To estimate the manurial requirements of Til for maximum yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Gram. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 28.7.1957. (iv) (a) 4 ploughings. (b) Drilling behind plough. (c) 3 lb./ac. (d) Row to row 1′. (e) 2 to 3. (v) Nil. (vi) N.A. (vii) Unirrigated. (viii) Hoeing and weeding once. (ix) 21.00″. (x) 26.11.1957 and 30.11.1957.

2. TREATMENTS :

Same as in expt. no. 57(8) on page 893.

3. DESIGN :

(i) 3^3 partially confd. (ii) (a) 9. (b) 112′×76′. (iii) 4. (iv) (a) and (b) 24′×12′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Dates of germination and flowering, disease incidence and seed yield. (iv) (a) 1954—contd. (b) No. (c) Nil. (v) (a) None. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 248 lb./ac. (ii) 60.0 lb./ac. (iii) N effect and interaction N×P×K is significant. (iv) Av. yield of seed in lb./ac.

	P_0	P_1	P_2	Mean	K_0	K_1	K_2
N_0	211	254	236	234	221	231	250
N_1	234	255	244	244	250	237	244
N_2	253	280	268	267	262	248	292
Mean	233	263	249	248	244	239	262
K_0	211	271	251				
K_1	216	239	263				
K_2	272	280	234				

S.E. of any marginal mean = 10.0 lb./ac.
S.E. of body of any table = 17.3 lb./ac.

Crop :- Til *(Kharif)*. **Ref :- Bh. 58(314).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To estimate the manurial requirements of Til for maximum yield.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 20.8.1958. (iv) (a) 4 ploughings by *desi* plough. (b) By drilling behind plough. (c) 3 lb./ac. (d) Rows 1′ apart. (e) N.A. (v) Nil. (vi) Local. (vii) Unirrigated. (viii) One hoeing and one weeding. (ix) 12.24″. (x) 26.12.1958.

2. TREATMENTS :

All combinations of (1), (2) and (3)

(1) 3 levels of N as A/S : $N_0=0$, $N_1=20$ and $N_2=40$ lb./ac.
(2) 3 levels of P_2O_5 as Super : $P_0=0$, $P_1=20$ and $P_2=40$ lb./ac.
(3) 3 levels of K_2O as Mur. Pot : $K_0=0$, $K_1=20$ and $K_2=40$ lb./ac.

3. DESIGN :

(i) 3^3 partially confd. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 24′×12′. (b) 22′×8′. (v) 1′×2′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) *Til* yield. (iv) (a) 1954—1959. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 257 lb./ac. (ii) 49.4 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of *til* in lb./ac.

	P_0	P_1	P_2	Mean	K_0	K_1	K_2
N_0	248	244	260	251	229	231	292
N_1	248	265	264	271	279	282	252
N_2	268	233	245	249	235	265	247
Mean	267	247	256	257	248	259	263
K_0	260	247	237				
K_1	262	256	260				
K_2	278	240	272				

S.E. of any marginal mean = 8.2 lb./ac.
S.E. of body of any table = 14.3 lb./ac.

Crop :- Til *(Kharif)*. **Ref :- Bh. 59(240).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To estimate the manurial requirements of Til for maximum yield.

1. BASAL CONDITIONS :

(i) (a) Nil (b) and (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 1.9.1959. (iv) (a) 4 ploughings by country plough. (b) By drilling behind plough. (c) 3 lb./ac. (d) Rows 1′ apart. (e) N.A. (v) Nil. (vi) Local. (vii) Unirrigated. (viii) One weeding and one hoeing. (ix) 16.87″. (x) 29.12.1959.

2. TREATMANTS :

Same as in expt. no. 58(314) above

3. DESIGN :

(i) 3^3 partially confd. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 24′×12′. (b) 22′×8′. (v) 1′×2′. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) Affected by cater-pillar. (iii) *Til* yield. (iv) (a) 1954—1959. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 80 lb./ac. (ii) 36.6 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of *Til* in lb /ac.

	P_0	P_1	P_2	Mean	K_0	K_1	K_2
N_0	56	70	84	70	80	61	69
N_1	78	85	87	83	87	91	72
N_2	95	91	78	88	106	84	75
Mean	76	82	83	80	91	79	72
K_0	84	98	91				
K_1	78	78	80				
K_2	68	70	78				

S.E. of any marginal mean = 6.1 lb./ac.
S.E. of body of any table = 10.6 lb./ac.

Crop :- Til. **Ref :- Bh. 54(26).**

Site :- Bot Sub-Stn., Dumka. **Type :- 'C'.**

Object :—To determine the optimum spacing for Til.

1. BASAL CONDITIONS :

(i) (a) No. (b) *Rahar.* (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 2.8.1954. (iv) (a) Ploughing by *desi*, plough (b) Dibbling. (c) N.A. (d) As per treatments. (e) 3 to 5. (v) N.A. (vi) Local. (vii) Unirrigated. (viii) 1 weeding and hoeing. (ix) 22.90". (x) 28.11.1954.

2. TREATMENTS :

Main-plot treatments :

3 spacings between rows : $R_1=12''$, $R_2=18''$ and $R_3=24''$.

Sub-plot treatments :

3 spacings between plants : $P_1=6''$, $P_2=12''$ and $P_3=18''$.

3. DESIGN :

(i) Split plot. (ii) (a) 3 main-plots/block ; 3 sub-plot/main-plot (b) N.A. (iii) 6. (iv) (a) N.A. (b) $6' \times 12'$. (v) one row alround. (vi) yes.

4. GENERAL :

(i) Fair; no lodging. (ii) Nil. (iii) Germination and yield of *til.* (iv) (a) 1954—N.A. (b) and (c) No. (v) (a) Saboure and Purnea. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 386 lb./ac. (ii) (a) 297.4 lb./ac. (b) 253.9 lb/ac. (iii) None of the effects is significant. (iv) Av. yield of seed in lb./ac.

	R_1	R_2	R_3	Mean
P_1	298	337	324	320
P_2	337	337	635	436
P_3	324	350	531	402
Mean	320	341	497	386

S.E. of difference of two

1. R marginal means = 99.1 lb./ac.
2. P marginal means = 84.6 lb./ac.
3. P means at the same level of R = 146.6 lb./ac.
4. R means at the same level of P = 155.4 lb./ac.

Crop :- Til **Ref :- Bh. 55(50).**

Site :- Bot. Sub-Stn,. Dumka. **Type :- ‘C’.**

Object :—To determine the optimum spacing for Til.

1. BASAL CONDITIONS :

(a) No. (b) Groundnut+*Kauny*. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 16.6.1955. (i) (iv) (a) One time by tractor and 3 times ploughing by *desi* plough. (b) Dibbling. (c) N.A. (d) As per treatments. (e) 4 to 5. (v) T.C. at 4 ton/ac. (vi) Local (late). (vii) Unirrigated. (viii) 3 weedings by hand hoe. (ix) 33.80″. (x) 5.11.1955.

2. TREATMENTS and 3. DESIGN :

Same as in expt. 54(26) on page 898.

4. GENERAL :

(i) Fair—no lodging. (ii) attack of vir-us disease and white ants—BHC dusted. (iii) Germination, date of flowering and yield of seed. (iv) (a) 1954—N.A. (b) and (c) No. (v) (a) Sabour and Purnea. (b) (vi) and (vii) Due to attack of white ants and virus disease the yield was not good.

5. RESULTS :

(i) 58 lb./ac. (ii) (a) 74.0 lb /ac. (b) 34.1 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of seed in lb./ac.

	R_1	R_2	R_3	Mean
P_1	53	61	67	60
P_2	43	49	55	49
P_3	47	88	55	63
Mean	48	66	59	58

S.E. of difference of two

1. R marginal means = 24.7 lb./ac.
2. P marginal means = 11.4 lc./ac.
3. P means at the same level of R = 19.7 lb./ac.
4. R means at the same level of P = 29.5 lb./ac.

Crop :- Til. *(Kharif).* **Ref :- Bh. 56(66).**

Site :- Agri. Res. Instt., Sabour. **Type :- ‘C’.**

Object :—To determine the optimum spacing for Til.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 3.8.1956. (iv) (a) 4 ploughings. (b) Dibbling by *khurpi*. (c) 3 lb./ac. (d) As per treatments. (e) 3. (v) F.Y.M. and oilcake before sowing. (vi) N.A. (vii) Unirrigated. (viii) Hoeing and weeding. (ix) 40.00″. (x) 12.11.1956.

2. TREATMENTS :

Strips in one direction—3 spacings between rows : $R_1=1'$, $R_2=1\frac{1}{2}'$ and $R_3=2'$.
Strips in orthogonal direction—3 spacings between plants : $P_1=6''$. $P_2=12''$ and $P_3=18''$.

3. DESIGN :

(i) Strip-plot. (ii) (a) 9. (b) 47.5′×21.5′. (iii) 6. (iv) (a) 15′×6′. (b) 12′×6′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Not good. (ii) Nil. (iii) Dates of germination and flowering, disease incidence and seed yield. (iv) (a) 1954—1958. (b) No. (c) Nil. (v) (a) Purnea and Dumka. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 66 lb./ac. (ii) (a) 13.3 lb./ac. (for R) (b) 25.3 lb./ac. (for P) (c) 17.9 lb./ac. (for R×P) (iii) Only P effect is significant. (iv) Av. yield of seed in lb./ac.

	R_1	R_2	R_3	Mean
P_1	87	98	45	77
P_2	75	71	57	68
P_3	69	59	29	52
Mean	77	76	44	66

S.E. of difference of two

1. R marginal means = 4.4 lb./ac.
2. P marginal means = 8.4 lb./ac.
3. P means at the same level of R = 11.9 lb./ac.
4. R means at the same level of P = 9.5 lb./ac.

Crop :- Til. ***(Kharif).*** **Ref :- Bh. 57(24).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'C'.**

Object :—To determine the optimum spacing for maximum yield of Til.

1. BASAL CONDITIONS :

(i) (a) Nil, (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 26.7.1957. (iv) (a) 4 ploughings. (b) Dibbling by *khurpi*. (c) 3 lb./ac. (d) As per treatments. (e) 3. (v) F.Y.M. applied. (vi) N.A. (vii) Unirrigated. (viii) Hoeing and weeding. (ix) 21.00″. (x) 28.11.1957.

2. TREATMENTS :

Same as in expt. no.56(66) no. page 899.

3. DESIGN :

(i) Strip plot. (ii) (a) 9. (b) 42′×21′. (iii) 6. (iv) (a) 15′×6′. (b) 12′×6′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Dates of germination and flowering, disease incidence and plot yield. (iv) (a) 1954—1958. (b) No. (c) —. (v) (a) aad (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 209 lb./ac. (ii) (a) 79.9 lb./ac. (b) 97.0. (c) 64.9 lb./ac. (iii) No effect is significant. (iv) Av. yield of seed in lb./ac.

	R_1	R_2	R_3	Mean
P_1	244	280	161	228
P_2	274	175	165	205
P_3	215	220	150	195
Mean	244	225	159	209

S.E. of difference of two

1. R marginal means = 26.6 lb./ac.
2. P marginal means = 32.3 lb./ac.
3. P means at the same level of R = 44.5 lb./ac.
4. R means at the same ievel of P = 40.6 lb./ac.

Crop :- Til *(Kharif)*. **Ref :- Bh. 58(166).**

Site :- Agri. Res. Inst. Sabour. **Type :- 'C'.**

Object :—To determine the optimum spacing for maximum yiled of Til.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Clayey loam. (b) N.A. (iii) 27.7.1958. (iv) (a) 4 ploughings. (b) Dibbling. (c) 3 lb./ac. (d) As per treatments. (e) N.A. (v) F.Y.M. and cakes applied. (vi) N.A. (vii) Unirrigated. (viii) One hoeing and weeding. (ix) 39.27". (x) 16.12.1958.

2. TREATMENTS :

Same as in expt. 56(66) on page 899.

3. DESIGN :

(i) Split-plot. (ii) (a) 9. (b) 42'×21.5'. (iii) 6. (iv) (a) 15'×6'. (b) 12'×6'. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Dates of germination and flowering, yield. (iv) (a) 1954—1958. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 224 lb./ac. (ii) (a) 55.5 lb./ac. (b) 80.8 lb./ac. (c) 47.2 lb./ac. (iii) Only R effect is significant. (iv) Av. yield of seed in lb./ac.

	R_1	R_2	R_3	Mean
P_1	273	230	237	247
P_2	234	174	238	215
P_3	232	162	233	209
Mean	246	189	236	224

S.E. of difference of two

1. R marginal means = 18.5 lb./ac.
2. P marginal means = 26.9 lb./ac.
3. P means at the same level of R = 34.9 lb./ac
4. R means at the same level of P = 28.9 lb./ac.

Crop :- Til *(Kharif)*. **Ref :- Bh. 58(313).**

Site :- Agri. Res. Instt. Sabour. **Type :- 'C'.**

Object :—To determine the optimum spacing for maximum yield of Til.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 27.7.1958. (iv) (a) 4 ploughings by *desi* plough. (b) Dibbling by *khurpi*. (c) 3 lb./ac. (d) As per treatments. (e) 3. (v) F.Y M. and oilcakes applied. (vi) Local. (vii) Unirrigated. (viii) One weeding and one hoeing. (ix) 25.32". (x) 16.12.1958.

2. TREATMENTS :

Same as in expt. 56(66) on page 899.

3. DESIGN :

(i) Split-plot. (ii) (a) 9. (b) N.A. (iii) 6. (iv) (a) 15′×6′. (b) 12′×6′. (v) 1½′ along width. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of *til.* (iv) (a) to (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 220 lb./ac. (ii) (a) 55.5 lb./ac. (b) 80.8 lb./ac. (c) 47.2 lb./ac. (iii) Only R effect is significant. (iv) Av. yield of seed in lb./ac.

	R_1	R_2	R_3	Mean
P_1	266	225	231	241
P_2	228	169	232	210
P_3	263	157	203	208
Mean	252	184	222	220

S.E. of difference of two

1. R marginal means = 18.5 lb./ac.
2. P marginal means = 26.9 lb./ac.
3. P means at the same level of R = 34.9 lb./ac.
4. R means at the same level of P = 28.9 lb./ac.

Crop :- Til *(Kharif)*. **Ref :- Bh. 54(115).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'C'.**

Object :—To study the effect of different spacings on the yield of Til.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 6, 8.8.54. (iv) (a) 3 ploughings. (b) Dibbling by *khurpi.* (c) 3 lb./ac. (d) As per treatment. (e) 1. (v) F.Y.M. and oilcakes before sowing. (vi) Local. (vii) Unirrigated. (viii) Hoeing and weeding once. (ix) 16.50″. (x) 30.12 1954.

2. TREATMENTS and 3. DESIGN :

Same as in expt. no. 54(26) on page 898.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of *til.* (iv) (a) 1954—1958. (b) No. (c) Nil. (v) (a) Purnea and Dumka. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 255 lb /ac. (ii) (a) 108.9 lb./ac. (b) 66.1 lb./ac. (iii) None of the effects and interaction is significant. (iv) Av. yield of *til* in lb./ac.

	R_1	R_2	R_3	Mean
P_1	229	324	298	284
P_2	259	236	219	238
P_3	233	292	204	243
Mean	240	284	240	255

S.E. of difference of two

1. R marginal means = 36.3 lb./ac.
2. P marginal means = 22.0 lb./ac.
3. P means at the same level of R = 138.2 lb./ac.
4. R means at the same level of P. = 47.2 lb./ac.

Crop :- Til. *(Kharif).* **Ref :- Bh. 55(186).**

Site :- Agri. Res. Instt. , Sabour. **Type :- 'C'.**

Object :—To determine optimum spacing for Til.

1. BASAL CONDITIONS :

(i) Nil. (b) Fallow. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 30.6.1955. (iv) (a) 4 ploughings. (b) Dibbling by *khurpi.* (c) 3 lb./ac. (d) As per treatments. (e) 1. (v) F.Y.M. and oilcakes before sowing. (vi) Local. (vii) Unirrigated. (viii) Hoeing and weeding. (ix) 28.70". (x) 12.12.1955.

2. TREATMENTS :

Main-plot treatment :

3 row spacings : $R_1=12''$, $R_2=18''$ and $R_3=24''$.

Sub-plot treatments :

3 plant spacings : $P_1=6''$, $P_2=9''$ and $P_3=12''$.

3. DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/block ; 3 sub-plots/main-plot. (b) 63'×15'. (iii) 6. (iv) (a) 15'×6' (b) 12'×6' (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Dates of germination and flowering, disease incidence and yield per plot. (iv) (a) 1954—1958. (b) No. (c) Nil. (v) (a) Dumka. (b) No. (v) to (vii) Nil.

5. RESULTS :

(i) 79.1 lb./ac. (ii) (a) 56.6 lb./ac. (b) 29.3 lb./ac. (iii) No effect is significant. (iv) Av. yield of til in lb./ac.

	R_1	R_2	R_3	Mean
P_1	74	74	70	73
P_2	95	98	88	94
P_3	66	64	83	71
Mean	78	79	80	79

S.E. of difference of two

1. R marginal means	=	18.9 lb./ac.
2. P marginal means	=	9.8 lb./ac.
3. P means at the same level of R	=	16.9 lb./ac.
4. R means at the same level of P	=	23.4 lb./ac.

Crop :- Linseed. **Ref :- Bh. 56(44).**

Site :- Govt. Agri. Farm, Musheri. **Type :- 'D'.**

Object :—To find out an effective control measure for Linseed rust.

1. BASAL CONDITIONS :

(i) (a) No. (b) and (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 30.11.1956 to 1.12.1956. (iv) (a) Tractor and Bihar ploughing. (b) Behind the plough. (c) 10 lb./ac. (d) and (e) —. (v) 30 lb./ac. of P_2O_5+30 lb./ac. of N. (vi) BR—29. (vii) Unirrigated. (viii) 1 hoeing and weeding from 19.1.1957 to 23.1.1957. (ix) 3.85". (x) 9.4.1957.

2. TREATMENTS :

4 treatments: D_0=Control, D_1=Spraying with Bordeaux mixture D_2=Spraying with Perenox at 3 lb. in 100 gl. of water, and D_3=Spraying with Oithine Z-7 at 1.5 lb./ac. in 100 gl. of water.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) 32'×20'. (b) 30'×18'. (v) 1'×1'. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Yellow rust of linseed. (iii) Yield of linseed. (iv) (a) 1956—contd. (b) No. (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 579 lb./ac. (ii) 131.6 lb./ac. (iii) Treatment do not differ significantly. (iv) Av. yield of seed in lb./ac.

Treatment	D_0	D_1	D_2	D_3
Av. yield	566	652	558	543

S.E./mean =65.8 lb./ac.

Crop :- Chillies *(Rabi)*. **Ref :- Bh. 55(252).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To determine a manurial schedule for Chillies.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 12.8.1955. (iv) (a) 3 ploughings. (b) Transplanting. (c) 4 oz./ac. (d) 1½′×1½′. (e) 1. (v) Nil. (vi) Local. (vii) Irrigated. (viii) 2 weedings. (ix) 10.76″. (x) Dec., 1955 to March 1956.

2. TREATMENTS :

13 manurial treatments : T_0=Control, $T_1=n_1$, $T_2=n_1k_1$, $T_3=n_1k_2$, $T_4=n_2$, $T_5=n_2k_1$, $T_6=n_2k_2$, $T_7=n_1p_1$, $T_8=n_1p_1k_1$, $T_9=n_2p_1$, $T_{10}=n_1p_2$, $T_{11}=n_2p_2$, and $T_{12}=n_2p_2k_2$.

Where n_1=40 lb./ac. of N as A/S, n_2=80 lb./ac. of N as A/S ; p_1=40 lb./ac. of P_2O_5 as Super, p_2=80 lb./ac. of P_2O_5 as Super ; k_1=40 lb./ac. of K_2O as Mur. Pot. and k_2=80 lb./ac. of K_2O as Mur. Pot.

3. DESIGN :

(i) R.B.D. (ii) (a) 13. (b) N.A. (iii) 4. (iv) (a) 8½′×7′. (b) 7½′×6′. (v) 6″×6″. (vi) Yes.

4. GENERAL :

(i) Good. (ii) N.A. (iii) Yield of chillies. (iv) (a) 1955—1957. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) Nil. (vii) Expt. failed in 1956.

5. RESULTS :

(i) 5150 lb./ac. (ii) 1514 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of chillies in lb./ac.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	2691	4795	5324	4279	5718	6944	5653

Treatment	T_7	T_8	T_9	T_{10}	T_{11}	T_{12}
Av. yield	5686	4945	5266	4369	5562	5718

S.E./mean= 757 0 lb./ac.

Crop :- Chillies *(Rabi)*. **Ref :- Bh. 57(253).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To determine a manurial schedule for Chillies.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 10.8.1957. (iv) (a) 2 ploughings. (b) Transplanting. (c) 4 oz./ac. (d) 1½′×1½′. (e) 1. (v) Nil. (vi) Local. (vii) Irrigated. (viii) 2 weedings. (ix) 12.20″. (x) Dec., 1957 to March, 1958.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 55(252) on page 904.

5. RESULTS :

(i) 1046 lb./ac. (ii) 196.0 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of Chillies in lb./ac.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	756	862	1089	1078	1189	1036	1078

Treatment	T_7	T_8	T_9	T_{10}	T_{11}	T_{12}
Av. yield	998	990	1217	1002	1172	1134

S.E./mean = 98.0 lb./ac.

Crop :- Chillies. *(Rabi)*. **Ref :- Bh. 57(220).**

Site :- Agri. Res. Instt., Pusa. **Type :- 'M'.**

Object :—To find out a suitable manurial schedule for Chillies.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Sanai*. (c) Nil. (ii) (a) Sandy loam. (b) N.A. (iii) 10.8.1957/29.9.1957. (iv) 2 ploughing by *desi* plough. (b) Line planting. (c) 4 oz./ac. (d) 18″×18″. (e) 1. (v) *Sanai* buried at site+10 C.L./ac. of F Y.M. (vi) *Pepper* (*long*). (vii) Irrigated. (viii) 2 weedings by *khurpi*. (ix) 11.95″. (x) 20.12.1957 to 18.3.1958.

2. TREATMENTS :

Same as in expt. no. 55(252) on page 904.

3. DESIGN :

(i) R.B.D. (ii) (a) 13. (b) N.A. (iii) 4. (iv) (a) 8′×7′. (b) 6′×6′. (v) 1′×½′. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) Attack of *dibichro chillies*—no control measures were taken. (iii) Yield of chillies. (iv) 1956—1959. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) to (vii) Nil.

5. RESULTS :

(i) 413 lb./ac. (ii) 199.6 lb./ac. (iv) Treatment differences are not significant. (iv) Av. yield of chillies in lb /ac.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	289	463	384	403	274	336	529

Treatment	T_7	T_8	T_9	T_{10}	T_{11}	T_{12}
Av. yield	605	431	312	384	406	554

S.E./mean = 99.8 lb./ac.

Crop :- Chillies. **Ref :- Bh. 58(244).**

Site :- Agri. Res. Instt., Pusa. **Type :- 'M'.**

Object :—To find out a suitable manurial schedule for Chillies.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) N.A. (iv) (a) 2 ploughings by *desi* plough. (b) Line planting. (c) 4 oz./ac. (d) 18″×18″. (e) 1. (v) 10 C.L./ac. of F.Y.M. (vi) *Pepper* (*long*). (vii) Irrigated. (viii) 2 weedings by *khurpi*. (ix) N.A. (x) 27.12.1958 to 14.3.1959.

2. TREATMENTS :

Same as in expt. no. 55(252) on page 904.

3. DESIGN :

(i) R.B.D. (ii) (a) 13. (b) N.A. (iii) 4. (iv) (a) 8′×7′. (b) 6′×6′. (v) 1′×½′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of chillies. (iv) (a) 1956—1959. (b) No. (c) Nil. (v) (a) and (a) N.A. (vi) Nil. (vii) Expt. failed in 1956.

5. RESULTS :

(i) 1219 lb./ac. (ii) 400.8 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of chillies in lb./ac.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Av. yield	1256	1289	1469	1249	1372	1391	1089

Treatment	T_7	T_8	T_9	T_{10}	T_{11}	T_{12}
Av. yield	1289	1174	1099	1060	1215	891

S.E./mean = 200.4 lb./ac.

Crop :- Chillies *(Rabi)*. **Ref :- Bh. 59(168).**

Site :- Agri. Res. Instt., Pusa. **Type :- 'M'.**

Object :—To find out a suitable manurial schedule for Chillies.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 14.8.1959/25.9.1959. (iv) (a) 2 ploughings by *desi* plough. (b) Line planting. (c) 4 oz./ac. (d) 18″×18″. (e) 1. (v) 10 C.L./ac. of F.Y.M. (vi) Local. (vii) Irrigated. (viii) 2 weedings by *khurpi*. (ix) 5.25″. (x) 18.12.1959 to 16.3.1960.

2. TREATMENTS :

Same as in expt. no. 55(252) on page 904.

3. DESIGN :

(i) R.B.D. (ii) (a) 13. (b) N.A. (iii) 4. (iv) (a) 8′×7′. (b) 6′×6′. (v) 1′×½′. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) Nil. (iii) Yield of chillies. (iv) (a) 1956—1959. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 486 lb./ac. (ii) 294.2 lb./ac. (iii) Treatment differenees are not significant. (iv) Av. yield of chillies in lb./ac.

Treatment	T_0	T_1	T_2	T_3	T_4	T_5	T_6
Av. yieid	416	416	473	539	435	265	369

Treatment	T_7	T_8	T_9	T_{10}	T_{11}	T_{12}
Av. yield	416	605	520	425	643	794

S.E./mean = 147.1 lb./ac.

Crop :- Jute *(Kharif)*. **Ref :- Bh. 59(218).**

Site :- Jute Res. Sub-Stn., Katihar. **Type :- 'M'.**

Object :—To see the effect of foliar application of fertilizers on fibre yield of Jute.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 30, 31.5.1959. (iv) (a) 7 ploughings by *desi* plough. (b) Sown by seed drill. (c) N.A. (d) 1′×1′. (e) 1. (v) Nil. (vi) JRO–632 (*olitorius*). and JRC–212 (*Capsularis*). (vii) Rainfed. (viii) One weeding, one hoeing and one thinning. (ix) N.A. (x) 13.10.1959.

2. TREATMENTS :

All combinations of (1) and (2)+a control.

(1) 2 sources of N : S_1=A/S and S_2=Urea.
(2) 2 methods of application : M_1=Soil application in single dose and M_2=Foliar spray in 4 equal doses.

N applied at 20 lb./ac. All the four plots with combinational treatments have been given additional dose of 30 lb./ac. of P_2O_5 as Super and 40 lb./ac. of K_2O as Mur. Pot. In split application with A/S, the subsequent doses were given at an interval of 2 days. While with *Urea* the interval was 7 days. 1st application of manure in all the plots was done 30 days after germination.

3. DESIGN

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4 for each variety. (iv) (a) and (b) 25′×22′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Poor due to overgrowth of weeds. (ii) No attack of disease or pest—Folidol was sprayed as preventive measures. (iii) Fibre yield. (iv) (a) to (c) No. (v) (a) and (b) None. (vi) and (vii) Nil.

5. RESULTS :

Variety JRC—212

(i) 225 lb./ac. (ii) 65.7 lb./ac. (iii) Main effect of M and interaction M×S are significant. (iv) Av. yield of fibre in lb./ac.

Control = 208 lb./ac.

	S_1	S_2	Mean
M_1	245	336	290
M_2	172	64	168
Mean	208	250	229

S.E. of any marginal mean = 23.2 lb./ac.
S.E. of body of table = 32.8 lb./ac.

Variety JRO—632

(i) 1043 lb./ac. (ii) 195.3 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of fibre in lb./ac.

	S_1	S_2	Mean
M_1	1125	1204	1164
M_2	1033	922	978
Mean	1079	1063	1071

S.E. of any marginal mean = 56.4 lb./ac.
S.E. of body of table = 97.6 lb./ac.

Crop :- Jute. **Ref :- Bh. 59(SFT).**

Site :- Monghyr (c.f.). **Type :- 'M'.**

Object :—Type A—To study the response of Jute to levels of N, P and K applied individually and in combinations.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Alluvial. (iii) Nil. (iv) May—June 1959. (v) N.A. (vi) Local. (vii) to (ix) N.A. (x) October-November 1959.

2. TREATMENTS :

0 =Control (no manure).
n =40 lb./ac. of N as A/S.
p =20 lb./ac. of P_2O_5 as Super.
np =40 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super.
k =20 lb./ac. of K_2O as Mur. Pot.
nk =40 lb./ac. of N as A/S+20 lb./ac. of K_2O as Mur. Pot.
pk =20 lb./ac. of P_2O_5 as Super+20 lb./ac. of K_2O as Mur. Pot.
npk=40 lb./ac. of N as A S+20 lb./ac. of P_2O_5 as Super+20 lb./ac. of K_2O as Mur. Pot.

3. DESIGN :

(i) and (ii) The district has been divided into four agriculturally homogeneous zones and one field assistant posted in each zone. The field assistant conducts the trials in one Revenue circle or thana in the zone and the circle/thana is changed once in two years with in the same zone. Each field assistant is required to conduct 31 trials in a year, 8 on *kharif* cereal, 8 on a *rabi* cereal, 8 on cash crops, 4 on an oilseed crop and 3 on a leguminous crop. Half the number of tirals conducted are of type A and the other half of type B on crops other than the legumes. The three trials on legumes are of type C. Residual effects of phosphate application are studied on type C trials in two out of the four zones in each district every year. The above experiments are laid out in randomly located fields in randomly selected villages in each of the 4 zones at the rate of one experiment per village. (iii) (a) N.A. (b) 1/80 ac. (iv) Yes.

4. GENERAL :

(i) Normal. (ii) Nil. (iii) Fibre yield. (iv) (a) to (c) N.A. (v) As per design. (vi) and (vii) Nil.

5. RESULTS :

Effect	n	p	k	S.E.	np	nk	pk	npk	S.E.
Av. response in lb./ac.	930	708	346	281.4	140	181	−33	592	80.6

Control yield = 6064 lb./ac. and no. of trials = 14.

Crop :- Jute. **Ref :- Bh. 59(SFT).**
Site :- Purnea (c.f.). **Type :- 'M'.**

Object :—Type B—To investigate the relative efficiency of different nitrogenous fertilizers at different doses for Jute.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Other alluvial. (iii) Nil. (iv) May-June 1959. (v) N.A. (vi) Local. (vii) to (ix) N.A. (x) October-November 1959.

2. TREATMENTS :

0 =Control (no manure).
n_1' =40 lb./ac. of N as Urea.
n_2' =80 lb./ac. of N as Urea.
n_1'' =40 lb./ac. of N as A/S/N.
n_2'' =80 lb./ac. of N as A/S/N.
n_1'''=40 lb./ac. of N as C/A/N.
n_2'''=80 lb./ac. of N as C/A/N.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 59(SFT) type A on page 907 conducted at Monghyr.

5. RESULTS :

Treatment	0	n_1'	n_2'	n_1''	n_2''	n_1'''	n_2'''
Av. yield	8541	9381	10154	9002	8994	9134	9759

G.M. = 9281 lb./ac. ; S.E./ =307.8 lb./ac. and no. of trials = 4.

Treatment	0	n_1'	n_2'	n_1''	n_2''
Av. yield	5233	5225	5571	5373	5579

G.M. = 5396 lb./ac. ; S.E. = 36.7 lb./ac. and no. of trials = 4.

N.B.—Experiment was conducted with 5 treatments only.

Crop :- Jute. **Ref :- Bh. 59(SFT).**

Centre :- Santhal Paraganas (c.f.). **Type :- 'M'.**

Object :—Type B —To investigate the relative efficiency of different nitrogenous fertilizers at different doses for Jute.

1. BASAL CONDITIONS :

(i) (a) to (c) Nil. (ii) Red. (iii) Nil. (iv) May—June 1959. (v) N.A. (vi) Local. (vii) to (ix) N.A. (x) October—November 1959.

2. TREATMENTS :

Same as in expt. no. 59(SFT) type B on page 908 conducted at Purnea.

3. DESIGN and 4. GENERAL :

Same as in expt. no. 59(SFT) type A on page 907 conducted at Monghyr.

5. RESULTS :

Treatment	0	n_1'	n_2'	n_1''	n_2''	n_1'''	n_2'''
Av. yield	7422	8105	8739	7702	8179	7834	8533

G.M.=8073 lb./ac. ; S.E. = 71.6 lb./ac. and no of trials = 4.

Crop :- Jute ***(Kharif).*** **Ref :- Bh. 58(287).**

Site :- Jute Res. Sub-Stn., Katihar. **Type :- 'C'.**

Object :—To study the effect of various spacings on yield of Jute seed.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 6.7.1958. (iv) (a) 9 ploughings by *desi* plough. (b) Sown in lines by seed drill. (c) 4 lb./ac. (d) As per treatments. (e) 1. (v) 20 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super. (vi) JRO—632 (*olitorius*). (vii) Rainfed. (viii) 2 weedings by *khurpi*. (ix) N.A. (x) 16.11.1958.

2. TREATMENTS :

All combinations of (1) and (2)+3 extra treatments.

(1) 3 row spacings : $R_1=12''$, $R_2=18''$ and $R_3=24''$

(2) 3 plants spacings : $S_1=3''$, $S_2=6''$ and $S_3=9''$

Extra treatments : $T_1=6''\times6''$, $T_2=9''\times9''$ and $T_3=12''\times12''$ spacings.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 12. (b) N.A. (iii) 4. (iv) (a) and (b) $38'\times16'$. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Yield of seed. (iv) (a) 1958—1959. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) N.A.

5. RESULTS :

(i) 648 lb./ac. (ii) 96.8 lb./ac. (iii) Main effects and interaction are not significant. (iv) Av. yield of seed in lb./ac.

$T_1=637, T_2=642$ and $T_3=664$ lb./ac.

	R_1	R_2	R_3	Mean
S_1	684	615	717	672
S_2	676	660	557	631
S_3	649	726	547	641
Mean	670	667	607	648

S.E. of any marginal means = 27.9 lb./ac.
S.E. of body of table = 48,4 lb./ac.

Crop :- Jute *(Kharif)*. **Ref :- Bh. 59(217).**

Site :- Jute Res. Stn., Katihar. **Type :- 'C'.**

Object :—To study the effect of various spacings on yield of Jute seed.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 4.6.1959. (vi) (a) 7 ploughings by *desi* plough. (b) In lines by seed drill. (c) 4 lb./ac. (d) As per treatments. (e) 1. (v) 20 lb./ac. of N as A/S+20 lb./ac. P_2O_5 as Super. (vi) JRO—632 (*olitorius*). (vii) Rainfed. (viii) 2 weedings and 2 hoeings. (ix) N.A. (x) 12.11.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt no. 58(287) on page 909.

4. GENERAL :

(i) Very poor. (ii) Nil. (iii) Jute seed. (iv) (a) 1958—1959. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 148 lb./ac. (ii) 46.3 lb./ac. (iii) Main effects and interaction are not significant. (iv) Av. yield of seed in lb./ac.

$T_1=190, T_2=138$ and $T_3=147$ lb./ac.

	R_1	R_2	R_3	Mean
S_1	195	160	133	163
S_2	167	151	125	148
S_3	124	124	116	121
Mean	162	145	125	144

S.E. of any marginal mean = 13.4 lb./ac.
S.E. of body of table = 23,2 lb./ac.

Crop :- Jute *(Kharif)*. **Ref :- Bh. 58(288).**

Site :- Jute Res. Sub-Stn., Katihar. **Type :- 'C'.**

Object :—To study the effect of various spacings on yield of Jute seed.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 5.7.1958. (iv) (a) 7 ploughings by *desi* plough. (b) In lines by seed drill. (c) 6 lb./ac. (d) As per treatments. (e) 1. (v) A/S at 100 lb./ac. 6 weeks after sowing. (vi) JRC—212 (*capsularis*). (vii) Rainfed. (viii) 2 weedings each followed by thinning and one hoeing after applying basal manure. (ix) N.A. (x) 25 11.1958.

2. TREATMENTS and 3. DESIGN :

Same as in expt. 58(287) on page 909.

4. GENERAL :

(i) Good. (ii) Attack of semi-looper—Endrine and Folidol were sprayed. (iii) Yield of seed. (iv) (a) 1958—1959. (b) and (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 998 lb./ac. (ii) 92.7 lb./ac. (iii) Main effects and interaction are not significant. (iv) Av. yield of seed in lb./ac.

T_1=999, T_2=991 and T_3=971 lb./ac.

	R_1	R_2	R_3	Mean
S_1	990	1008	1014	1004
S_2	1054	1031	1030	1038
S_3	1023	910	955	963
Mean	1022	983	1000	1002

S.E. of any marginal mean = 26.8 lb./ac.
S.E. of body of table = 46.4 lb./ac.

Crop :- Jute *(Kharif)*. **Ref :- Bh. 58(286).**
Site :- Jute Res. Sub-Stn., Katihar. **Type :- 'C'.**

Object :—To study the effect of seed rate on yield of the Jute Seed.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Jute in previous *kharif.* (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 1.7.1958. (iv) (a) 7 ploughings by *desi* plough. (b) Broadcast. (c) As per treatments. (d) Nil (e) 1. (v) 20 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super. (vi) JRO—632 (*olitorius*). (vii) Rainfed. (viii) 2 weedings and 2 hoeings. (ix) N.A. (x) 19, 20.11.1958.

2. TREATMENTS :

7 seedrates + one extra treatment (E) : $R_1=\frac{1}{2}$, $R_2=1$, $R_3=2$, $R_4=3$, $R_5=4$, $R_6=5$, $R_7=6$ lb./ac. and E=3 lb./ac. with usual thinning to give a spacing of 8″×8″.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 6. (iv) (a) 38′×16′. (b) 36′×14′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Attack ot semi-looper—D.D.T. was sprayed ; hairy cater-pillar were hand picked. (iii) Yield of seed. (iv) (a) 1958—1959. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) Nil. (vii) There was heavy growth of weeds.

5. RESULTS :

(i) 672 lb./ac. (ii) 83.7 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of seed in lb./ac.

Treatment	R_1	R_2	R_3	R_4	R_5	R_6	R_7	E
Av. yield	678	718	695	631	667	654	679	651

S.E./mean= 34.2 lb./ac.

Crop :- Jute. *(Kharif).* **Ref :- Bh. 59(219).**

Site :- Jute. Res. Sub-Stn., Katihar. **Type :- 'C'.**

Object :—To study the effect of seed rate on yield of Jute Seed.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) N A. (ii) (a) Sandy loam. (b) N.A. (iii) 7.6.1959. (iv) (a) 6 ploughings by *desi* plough. (b) Broadcast. (c) As per treatments. (d) Nil. (e) 1. (v) 20 lb./ac. of N as A/S+20 lb /ac of P_2O_5 as Super. (vi) JRO–632 (*olitorius*). (vii) Rainfed. (viii) 2 weedings and 1 hoeing. (ix) N.A. (x) 29.11.1959.

2 TREATMENTS and 3. DESIGN :

Same as in expt. no. 58(286) on page 911.

4. GENERAL :

(i) Average. (ii) Nil. (iii) Yield of seed. (iv) (a) 1958–1959. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 410 lb /ac. (ii) 48.1 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of seed in lb./ac.

Treatment	R_1	R_2	R_3	R_4	R_5	R_6	R_7	E
Av. yield	271	349	354	463	454	485	499	401

S.E /mean = 19.6 lb./ac.

Crop :- Jute. *(Kharif).* **Ref -: Bh. 58(285).**

Site :- Jute. Res. Sub-Stn., Katihar. **Type :- 'C'.**

Object :—To study the effect of seed rate on yield of Jute Seed.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 4.7.1958. (iv) (a) 7 ploughings by *desi* plough. (b) Broadcast. (c) As per treatments. (d) Nil (e) 1. (v) 20 lb./ac. of N as A/S+20 lb /ac. of P_2O_5 as super (vi) JRC—212 (*capsularis*). (vii) Rainfed. (viii) 2 weedings and 2 hoeings. (ix) N.A. (x) 28.11.1958.

2. TREATMENTS :

9 seed rates +one extra treatment (E) : $R_1=1$, $R_2=2$, $R_3=3$, $R_4=4$, $R_5=5$, $R_6=6$, $R_7=7$, $R_8=8$, $R_9=9$ lb./ac. and E=5 lb./ac. with usual thinning to give a spacing of 8″×8″.

3. DESIGN ;

(i) R.B.D. (ii) (a) 10. (b) N.A. (iii) 6. (iv) (a) 38′×16′. (b) 36′×14′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Attack of semi-looper—Folidol was sprayed. (iii) Yield of seed. (iv) (a) 1958—1959. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 702 lb./ac. (ii) 100.1 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of seed in lb./ac.

Treatment	R_1	R_2	R_3	R_4	R_5	R_6	R_7	R_8	R_9	E
Av. yield	654	748	692	744	698	778	695	699	672	638

S.E./mean = 40.9 lb./ac.

Crop :- Jute. *(Kharif)*. **Ref :- Bh. 59(220).**

Site :- Jute. Res. Sub-Stn., Katihar. **Type :- 'C'.**

Object :—To study the effect of seed rate on yield of Jute seed.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Jute in last *kharif* and fallow in *rabi*. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 29.6.1959. (iv) (a) 7 ploughings by *desi* plough. (b) Broadcast. (c) As per treatments. (d) —. (e) 1. (v) 20 lb./ac. of N as A/S+20 lb /ac. of P_2O_5 as Super. (vi) JRC—212 (*capsularis*). (vii) Rainfed. (viii) and (ix) N.A. (x) 15.11.1959.

2. TREATMENTS and 3. DESIGN :

Same as in expt. 58(285) on page 912.

4. GENERAL :

(i) Poor. (ii) Nil. (iii) Yield of jute seed. (iv) (a) 1958—1959. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 257 lb./ac. (ii) 18.0 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of seed in lb./ac.

Treatment	R_1	R_2	R_3	R_4	R_5	R_6	R_7	R_8	R_9	E
Av. yield	194	254	269	275	285	271	250	262	255	258

S.E./mean = 7.3 lb./ac.

Crop :- Jowar fodder *(Kharif)*. **Ref :- Bh. 58(4).**

Site :- Govt. Agri. Farm, Musheri. **Type :- 'M'.**

Object :—To find the manurial requirements of Jowar for fodder.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Wheat. (c) Super at 40 lb./ac. (ii) (a) Sandy loam. (b) N.A. (iii) 1.8 1958. (iv) (a) 3 ploughings. (b) Broadcast. (c) 15 sr./ac. (d) N.A. (e) 1. (v) A/S at 45 sr./ac.+Super at 60 sr./ac. to the experimental area. (vi) Local (late). (vii) Unirrigated. (viii) Hoeing and weeding. (ix) 27.47". (x) 26/27.10.1958.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 3 levels of N as A/S : $N_0=0$, $N_1=10$ and $N_2=20$ lb./ac.
(2) 3 levels of P_2O_5 as Super : $P_0=0$, $P_1=20$ and $P_2=40$ lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) 168′×261′. (iii) 4. (iv) (a) 42′×29′. (b) 40′×27′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Yield of fodder. (iv) (a) to (c) No. (v) to (vii) Nil.

5. RESULTS :

(i) 4889 lb./ac. (ii) 2720 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of fodder in lb./ac.

	P_0	P_1	P_2	Mean
N_0	3497	6397	4381	4759
N_1	3024	5616	5328	4656
N_2	2263	7097	6397	5252
Mean	2928	6370	5369	4889

S.E. of any marginal mean = 785.2 lb./ac.
S.E. of body of table = 1360 lb./ac.

Crop :- Jowar fodder *(Kharif).* **Ref :- Bh. 58(201).**

Site :- Govt. Agri. Farm, Musheri. **Type :- 'M'.**

Object :—To find the manurial requirements of Jowar for Fodder.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 1.8.1958. (iv) (a) 2 ploughings by *desi* plough. (b) Broadcast. (c) 15 srs./ac. (d) and (e) —. (v) Nil. (vi) Local. (vii) Unirrigated. (viii) Nil. (ix) 34.47″. (x) 26 and 27.10.1958.

2. TREATMENTS:

All combinations of (1) and (2)
(1) 3 levels of N as A/S : $N_0=0$, $N_1=20$ and $N_2=40$ lb./ac.
(2) 3 levels of P_2O_5 as Super : $P_0=0$, $P_1=20$ and $P_2=40$ lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b N.A. (iii) 4. (iv) (a) and (b) 27′×40′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Nil. (iii) Fodder yield. (iv) (a) to (c) No. (v) (a) Sepaya and Monghyr. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 4737 lb./ac. (ii) 358.4 lb./ac. (iii) Main effect of N is highly significant and interaction N×P is significant. (iv) Av. yield of fodder in lb./ac.

	P_0	P_1	P_2	Mean
N_0	2919	3017	2056	2664
N_1	6182	5607	6758	6182
N_2	4372	5327	6395	5365
Mean	4491	4650	5070	4737

S.E. of any marginal mean = 103.5 lb./ac.
S.E. of body of table = 179.2 lb./ac.

Crop :- Jowar fodder *(Kharif).* **Ref :- Bh. 56(194).**

Site :- Distt. Agri. Farm, Monghyr. **Type :- 'M'.**

Object :—To find the manurial requirements of Jowar for fodder.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Rahar.* (c) B.M. at 2½ mds./ac. (ii) (a) Clayey loam. (b) N.A. (iii) 11, 12.7.1956. (iv) (a) One ploughing by Bihar senior plough and 2 ploughings by *desi* plough. (b) Behind plough in lines. (c) 10 srs./ac. (d) Rows 1′ apart. (e) —. (v) Nil. (vi) A–38. (vii) Unirrigated. (viii) One weeding. (ix) 27.3″. (x) 18 to 21.9.1956.

2. TREATMENTS :

All combinations of (1) and (2)
(1) 3 levels of N as A/S : $N_0=0$, $N_1=30$, and $N_2=60$ lb./ac.
(2) 3 levels of P_2O_5 as Super : $P_0=0$, $P_1=30$ and $P_2=60$ lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4, (iv) (a) 75′×16½′. (b) 72′×15′. (v) 18″×9″. (iv) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Fodder yield. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 11264 lb./ac. (ii) 3129 lb./ac. (iii) Only N effect is highly significant. (iv) Av. yield of fodder in lb./ac.

	P_0	P_1	P_2	Mean
N_0	6975	7963	8608	7849
N_1	11189	12681	14112	12661
N_2	11724	14213	13910	13282
Mean	9963	11619	12210	11264

S.E. of any marginal mean = 903.3 lb /ac.
S E. of body of table = 1565 lb./ac.

Crop :- Jowar Fodder (*Kharif*). **Ref :- Bh. 57(200).**

Site :- Distt. Agri. Farm, Monghyr. **Type :- 'M'.**

Object :—To find the manurial requirements of Jowar for fodder.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) 1½ tons/ac. of T.C. 1 md./ac.+of Super +½ md./ac. of A/S. (ii) (a) Red loamy soil. (b) N.A. (iii) 7.7.1957. (iv) (a) One ploughing by tractor and 2 by *desi* plough. (b) Behind the plough in lines. (c) 10 srs./ac. (d) Rows 1′ apart. (e) —. (v) Nil. (vi) Local. (vii) Unirrigated. (viii) One weeding. (ix) 16.95″. (x) 9.10.1957.

2. TREATMENTS :

Same as in expt. no. 55(194) on page 914.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 35′×25′. (b) 33′×22′. (v) 1½′×1½′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of fodder. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 30460 lb./ac. (ii) 1590 lb./ac. (iii) Main effects of N and P are highly significant. (iv) Mean yield of fodder in lb./ac.

	P_0	P_1	P_2	Mean
N_0	26598	26105	28943	27215
N_1	32646	30269	34066	32327
N_2	33154	30932	31427	31838
Mean	30799	29102	31479	30460

S.E. of any marginal mean = 459.0 lb./ac.
S.E. of body of table = 795.0 lb./ac.

Crop :- Jowar fodder *(Kharif)*. **Ref :- Bh. 58(204).**

Site :- Distt. Agri. Farm, Monghyr. **Type :- 'M'.**

Object :—To find the manurial requirements of Jowar for fodder.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Clayey loam. (b) N.A. (iii) 12.7.1958. (iv) (a) One ploughing by tractor and one by *desi* plough. (b) Behind the plough in lines. (c) 10 srs./ac. (d) Rows 1′ apart. (e) —. (v) Nil. (vi) Local. (vii) Unirrigared. (viii) Nil. (ix) 38.84″. (x) 21 to 25.10.1958.

2. TREATMENTS :

Same as in expt. no. 56(194) on page 914.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 35′×25′. (b) 33′×22′. (v) 1′ along width and 1½′ along length. (vi) Yes.

4. GENERAL :

(i) Fair. (ii) Nil. (iii) Fodder yield. (iv) (a) 1956—1958. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 13299 lb./ac. (ii) 3040 lb./ac. (iii) No effect is significant. (iv) Av. yield of fodder in lb./ac.

	P_0	P_1	P_2	Mean
N_0	9309	9079	9556	9315
N_1	13828	15767	12486	14027
N_2	15846	16692	17125	16554
Mean	12994	13846	13056	13299

S.E. of any marginal mean = 877.6 lb./ac.
S.E. of body of table = 1520 lb./ac.

Crop :- Jowar fodder *(Kharif)*. **Ref :- Bh. 58(187).**

Site :- Agri. Res. Instt., Pusa. **Type :- 'M'.**

Object : To find out the manurial requirements of Jowar for fodder.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 19.7.1958. (vi) (a) 3 ploughings by Bihar senior plough. (b) Behind the plough in lines. (c) 15 srs./ac. (d) Rows 15″ apart. (e) —. (v) Nil. (vi) Local. (vii) Unirrigated (viii) Nil. (ix) 36.37″. (x) 29.10.1958.

2. TREATMENTS :

Same as in expt. no 56(194) on page 914.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) and (b) 40′3″×27′2″. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of fodder. (iv) (a) to (c) No. (v) (a) Sabour, Monghyr and Sepaya. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3470 lb./ac. (ii) 1940 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of fodder in lb./ac.

	P_0	P_1	P_2	Mean
N_0	4008	3252	4177	3812
N_1	2625	3202	3630	3152
N_2	3719	2387	4227	3444
Mean	3451	2947	4011	3470

S.E. of any marginal mean = 560.0 lb./ac.
S.E. of body of table = 970.0 lb./ac.

Crop :- Jower fodder *(Kharif)*. **Ref :- Bh. 58(199).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To find the manurial requirments of Jowar for fodder.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Rahar. (c) N.A. (ii) (a) Clayey loam. (b) N.A. (iii) 25.6.1958. (iv) (a) 2 ploughings by *desi* plough. (b) Behind plough in lines. (c) 15 srs./ac. (d) Rows 15″ apart. (e)—. (v) Nil. (vi) Local. (vii) Unirrigated. (viii) One intercultural operation. (ix) 30.54″. (x) 19 to 24.9.1958.

2. TREATMENTS :

Same as in expt. no. 56(194) on page 914.

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) 34′×23′. (b) 33′×22′. (v) 6″ alround. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Nil. (iii) Yield of fodder. (iv) (a) to (c) No. (v) (a) Monghyr, Sepaya and Pusa. (b) Nil. (vi) and (vii) Nil.

5. RESULTS :

(i) 10794 lb./ac. (ii) 2648 lb./ac. (iii) Only N effect is significant. (iv) Av. yield of fodder in lb./ac.

	P_0	P_1	P_2	Mean
N_0	8158	10349	8187	8898
N_1	9957	10468	11308	10578
N_2	16697	13438	13588	12908
Mean	9937	11418	11028	10794

S.E. of any marginal mean = 764.4 lb./ac.
S.E. of body of table = 1324.0 lb./ac.

Crop :- Jowar fodder *(Kharif)*. **Ref :- Bh. 58(202).**

Site :- Bot. Sub-Stn., Sepaya. **Type :- 'M'.**

Object :—To find the manurial requirements of Jowar for Fodder.

BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 4.7.1958. (iv) (a) 2 ploughings by *desi* plough. (b) Behind plough. (c) 10 srs./ac. (d) Rows 1′ apart. (e) —. (v) Nil. (vi) Local. (vii) Unirrigated. (viii) Nil. (ix) 30.00″. (x) 6, 7.10.1958.

2. TREATMENTS :

Same as in expt. no. 56(194) on page 914

3. DESIGN :

(i) R.B.D. (ii) (a) 9. (b) N.A. (iii) 4. (iv) (a) and (b) 36′×15′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) N.A. (ii) Nil. (iii) Yield of fodder. (iv) (a) to (c) No. (v) (a) Monghyr and Musheri. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 10873 lb./ac. (ii) 2845 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of fodder in lb./ac.

	P_0	P_1	P_2	Mean
N_0	7999	10875	10456	9777
N_1	10638	13014	11476	11709
N_2	8855	9775	14773	11134
Mean	9164	11221	12235	10873

S.E. of any marginal mean = 821.3 lb./ac.
S.E. of body of table = 1422.0 lb./ac.

Crop :- Jowar fodder *(Kharif)*. **Ref :- Bh. 57(262).**
Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To assess the yield of Jowar for fodder under heavy manuring.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 26.6.1957. (iv) (a) 4 ploughings by country plough. (b) Broadcast. (c) 12 srs/ac. (d) and (e) —. (v) Nil. (vi) A—32. (vii) Irrigated. (viii) One weeding and 2 earthings. (ix) 19.40″. (x) 8.9.1957 and 20.12.1957.

2. TREATMENTS:

1. No manure.
2. 40 lb./ac. of N as F.Y.M. before sowing.
3. As in treatment 2+20 lb./ac. of N as A/S one month after sowing.
4. As in treatment 3+40 lb./ac. of N as A/S after first cut.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 6. (iv) (a) 68′×18′6″. (b) 66′×16′6″. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Fodder yield. (iv) (a) 1955—1958. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 16481 lb./ac. (ii) 2220 lb /ac. (iii) Treatment differences are significant. (iv) Av. yield of fodder in lb./ac.

Treatment	1	2	3	4
Av. yield	16778	17180	17875	14090

S.E./mean = 906.3 lb./ac.

Crop :- Jowar fodder *(Kharif)*. **Ref :- Bh. 55(261).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'MV'.**

Object :—To assess the yield of different varieties of Jowar for fodder under heavy manuring.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 24.6.1955. (iv) (a) 3 ploughings by country plough followed by planking, (b) Broadcast. (c) 6 srs./ac. (d) and (e) N.A. (v) Nil. (vi) As per treatments. (vii) Irrigated. (viii) One weeding and one hoeing. (ix) 28.66". (x) 18.9.1955 and 25.11.1955.

2. TREATMENTS:

Main-plot treatments :

3 varieties : V_1=A—35, V_2=A—38 and V_3=Local.

Sub-plot treatments :

4 levels of N as oilcake : S_0=No manure, S_1=20 lb./ac. of N before sowing and 20 lb./ac. of N one month after sowing, S_2=20 lb./ac. of N before 1st cut, S_3=40 lb./ac. of N after 1st cut.

3. DESIGN :

(i) Split-plot. (ii) (a) 3 main-plots/block ; 4 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 33'×18'. (b) 30'×15'. (v) 1½'×1½'. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) 1955—1958. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 14319 lb./ac. (ii) (a) 18361 lb./ac. (b) 5038 lb./ac. (iii) Only S effect is significant. (iv) Av. yield of fodder in lb./ac.

	V_1	V_2	V_3	Mean
S_0	20362	19174	10035	16524
S_1	20429	18570	11984	16994
S_2	10326	11872	10438	10879
S_3	14314	14538	9789	12880
Mean	16358	16038	10562	14319

S.E. of difference of two

1. V marginal means = 6492 lb./ac.
2. S marginal means = 2056 lb./ac.
3. S means at the same level of V = 3562 lb./ac.
4. V means at the same levsl of S = 7186 lb./ac.

Crop :- Jowar fodder. *(Kharif)*. **Ref :- Bh. 56(254).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'MV'.**

Object :—To assess the yield of different varieties of Jowar for fodder under heavy manuring.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 18.6.1956. (iv) (a) 3 ploughings by country plough. (b) Broadcast. (c) 12 srs./ac. (d) and (e) —. (v) Nil. (vi) As per treatments. (vii) Irrigated. (viii) One weeding and one hoeing. (ix) 19.40". (x) 12.9.1956 and 12.11.1956.

2. TREATMENTS :

Main-plot treatments :

4 varieties : V_1=A—10, V_2=A—32, V_3=A—35 and V_4=A—38.

Sub-plot treatments :

4 levels of N : S_0=No manure, S_1=40 lb./ac. as oilcake before sowing, S_2=40 lb./ac. of N as oilcake before sowing+20 lb./ac. N as A/S one month after sowing and S_3=40 lb./ac. as oilcake before sowing+20 lb./ac. of N as A/S one month after sowing+40 lb./ac. of N as A/S after 1st cut.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/block ; 4 sub-plots/main-plot. (b) N.A. (iii) 6. (iv) (a) 46′×12′. (b) 44′×10′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Fodder yield. (iv) (a) 1955—1958. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 8425 lb./ac. (ii) (a) 5860 lb./ac. (b) 2204 lb./ac. (iii) Main effect of S alone is significant. (iv) Av. yield of fodder in lb./ac.

	S_1	S_2	S_3	S_4	Mean
V_1	9318	11200	9117	6048	8921
V_2	8803	9990	10147	6698	8910
V_3	10886	10864	9722	5958	9358
V_4	5914	7101	8691	4346	6513
Mean	8730	9789	9419	5762	8425

S.E. of difference of two

1. V marginal means = 1692 lb./ac.
2. S marginal means = 636 lb./ac.
3. S means at the same level of V = 1272 lb./ac.
4. V means at the same level of S = 2019 lb./ac.

Crop :- Jowar fodder *(Kharif).* **Ref :- Bh. 58(255).**

Site :- Govt. Agri. Farm, Musheri. **Type :- 'C'.**

Object :—To find out the best combination of seed rate and method of sowing Jowar for fodder.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Gram. (c) N.A. (ii) (a) and (b) N.A. (iii) 30.7.1958. (iv) (a) 2 ploughings by country plough. (b) to (d) As per treatments. (e) N.A. (v) 30 lb./ac. of N as A/S. (vi) Local. (vii) Unirrigated. (viii) Nil. (ix) 24.96″. (x) 24 and 25.10.1958.

2. TREATMENTS :

Strips in one direction :

4 methods of sowing : M_1=Broadcast, M_2=Sowing in lines 12″ apart, M_3=Sowing in lines 15″ apart and M_4=sowing in lines 18″ apart.

Strips in orthogonal direction :

4 seed rates : S_1=8, S_2=10, S_3=12 and S_4=14 srs./ac.

3. DESIGN :

(i) Strip plot. (ii) (a) 16. (b) N.A. (iii) 4. (iv) (a) and (b) 27′×40′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of fodder. (iv) (a) to (c) No. (v) (a) Sepaya, Putida and Monghyr. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 3485 lb./ac. (ii) (a) 3190 lb./ac. (for M). (b) 1404 lb./ac. (for S). (c) 1288 lb./ac. (for M×S). (iii) Only interaction M×S is significant. (iv) Av. yield of fodder in lb./ac.

	S_1	S_2	S_3	S_4	Mean
M_1	3494	3629	4570	4234	3982
M_2	2845	3002	5846	2106	3450
M_3	1546	1971	5398	4458	3343
M_4	3427	2867	3450	2912	3164
Mean	2828	2867	4816	3428	3485

S.E. of difference of two

1. M marginal means = 1128 lb./ac.
2. S marginal means = 496 lb./ac.
3. S means at the same level of M = 932 lb./ac.
4. M means at the same leval of S = 1376 lb./ac.

Crop :- Jowar fodder *(Kharif)*.

Ref :- Bh. 56(235).

Site :- Distt. Agri. Farm, Monghyr.

Type :- 'C'.

Object :—To obtain the best method of sowing and seed rate for high yield of fodder.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Gram. (c) Nil. (ii) (a) Clayey loam. (b) N.A. (iii) 16, 25 and 26.6.1956. (iv) (a) One ploughing with Bihar senior plough and two with *desi* plough. (b) to (d) As per treatments. (e) N.A. (v) 40 lb./ac. of N as A/S. (vi) Local. (vii) Unirrigated. (viii) One weeding. (ix) 23.5". (x) 1 to 4.10.1956.

2. TREATMENTS :

Same as in expt. no. 58(255) on page 920.

3. DESIGN :

(i) Strip-plot. (ii) (a) 16. (b) 292'×71'. (iii) 4. (iv) (a) 71'×18¼'. (b) 68'×16' (v) 18"×14". (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Fodder yield, (vi) (a) 1956—1958. (b) and (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 27524 lb./ac. (ii) (a) 6055 lb./ac. (for M) (b) 19719 lb./ac. (for S) (c) 14580 lb./ac. for M×S) (iii) Only M effect is significant. (iv) Av. yield of fodder in lb./ac.

	S_1	S_2	S_3	S_4	Mean
M_1	27579	33909	24712	32287	29622
M_2	26974	29015	26143	29776	27977
M_3	21589	25532	26383	32668	26543
M_4	25673	25661	23480	29006	25955
Mean	25454	28529	25180	30934	27524

S.E. of difference of two

1. M marginal means = 2141 lb./ac.
2. S marginal means = 6972 lb./ac.
3. S means at the same level of M = 11328 lb./ac.
4. M means at the same level of S = 9181 lb./ac.

Crop :- Jowar fodder *(Kharif).* **Ref :- Bh. 57(224).**

Site :- Distt. Agri. Farm, Monghyr. **Type :- 'C'.**

Object :—To find out the optimum seed rate and method of sowing Jowar for fodder.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Gram. (c) 3 mds./ac. of Super+1½ md./ac. of A/S. (ii) (a) Red loamy soil. (b) N A. (iii) 26.7.1957. (iv) (a) One ploughing by tractor and 2 ploughings by *desi* plough. (b) to (d) As per treatments. (e) N.A. (v) 40 lb./ac. of N as A/S. (vi) Local. (vii) Unirrigated. (viii) One weeding. (ix) 10.04″. (x) 12.10.1957.

2. TREATMENTS :

Same as in expt. no. 58(255) on page 920.

3. DESIGN :

(i) Strip plot. (ii) (a) 16. (b) N.A. (iii) 4. (iv) (a) 36′×24′. (b) 33′×22′. (v) 1½′×1′. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of fodder. (iv) (a) 1956—1958. (b) and (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 21987 lb./ac. (ii) (a) 4323 lb./ac. (for M) (b) 3371 lb./ac. (for S) (c) 2538 lb./ac. (for M×S) (iii) None of the effects is significant. (iv) Av. yield of fodder in lb./ac.

	S_1	S_2	S_3	S_4	Mean
M_1	21078	23251	23206	24640	23044
M_2	20944	24954	24102	23498	23374
M_3	19219	19802	22758	20250	20507
M_4	20742	21437	21616	20294	21022
Mean	20496	22361	22920	22170	21987

S.E. of difference of two

1. M marginal means = 1528 lb./ac.
2. S marginal means = 1192 lb./ac,
3. S means at the same level of M = 1958 lb./ac.
4. M means at the same level of S = 2180 lb./ac.

Crop :- Jowar fodder *(Kharif).* **Ref :- Bh. 58(253).**

Site :- Distt. Agri. Farm, Monghyr. **Type :- 'C'.**

Object :—To find the optimum seed rate and method of sowing of Jowar for fodder.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Clayey loam. (b) N.A. (iii) 30.6.1958 to 2.7.1958. (iv) (a) One ploughing with tractor and 2 ploughings with *desi* plough. (b) to (d) As per treatments. (e) N.A. (v) 40 lb./ac. of N as A/S. (vi) Local. (vii) Unirrigated. (viii) Nil. (ix) 40.04″. (x) 5 to 12.10.1958.

2. TREATMENTS :

Main-plot treatments :

4 methods of sowing : M_1=Broadcast, M_2=Sowing in lines 12″ apart, M_3=Sowing in lines 15″ apart and M_4=Sowing in lines 18″ apart.

Sub-plot treatments :

4 seed rates : S_1=8, S_2=10. S_3=12 and S_4=14 srs./ac.

3. DESIGN .

(i) Split-plot. (ii) (a) 4 main-plots/block; 4 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) 32¾′×26′. (b) 30′×24′. (v) 13″×12″. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Yield of fodder. (iv) (a) 1956—1958. (b) and (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 19900 lb./ac. (ii) (a) 4496 lb./ac. (b) 5123 lb./ac. (iii) Only M effect is significant. (iv) Av. yield of fodder in lb./ac.

	S_1	S_2	S_3	S_4	Mean
M_1	17293	19757	20339	17494	18721
M_2	20944	21594	20563	20384	20871
M_3	19197	20250	21034	19421	19976
M_4	20317	20496	20138	19174	20031
Mean	19438	20524	20518	19118	19900

S.E. of difference of two.

1. M marginal means = 1590 lb./ac.
2. S marginal means = 1812 lb./ac.
3. S means at the same level of M = 3622 lb./ac.
4. M means at the same level of S = 6471 lb./ac.

* * *

Crop :- Jowar fodder *(Kharif)*. **Ref :- Bh. 58(252).**

Site :- Distt. Agri. Farm, Putida. **Type :- 'C'.**

Object :—To find out best method of sowing and seed rate for Jowar.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Wheat. (c) 20 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super. (ii) (a) Red laterite. (b) N.A. (iii) 27.6.1958. (iv) (a) 2 ploughings by *desi* plough. (b) to (d) As per treatments. (e) N.A. (v) 40 lb./ac. of N as A/S. (vi) Local. (vii) Unirrigated. (viii) Nil. (ix) 19.5". (x) 6.9.1958.

2. TREATMENTS :

Same as in expt. no. 58(253) on page 922.

3. DESIGN :

(i) Split-plot. (ii) (a) 4 main-plots/block ; 4 sub-plots/main-plot. (b) N.A. (iii) 3. (iv) (a) and (b) 18′×14′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of fodder. (iv) (a) to (c) N.A. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 58716 lb./ac. (ii) (a) 2784 lb./ac. (b) 6160 lb./ac. (iii) Main effects of M and S are highly significant. (iv) Av. yield of fodder in lb./ac.

	S_1	S_2	S_3	S_4	Mean
M_1	53334	63392	60435	61018	59545
M_2	50960	59606	52730	70515	58453
M_3	65184	51542	60435	67536	61174
M_4	59830	53917	48586	60435	55692
Mean	57327	57114	55546	64876	58716

S.E. of difference of two

1. M marginal means = 1136 lb./ac.
2. S marginal means = 2515 lb./ac.
3. S means at the same level of M = 4356 lb./ac.
4. M means at the same level of S = 4501 lb./ac.

Crop :- Jowar fodder *(Kharif)*. **Ref :- Bh. 56(234).**
Site :- Govt. Agri. Farm, Piprakothi. **Type :- 'C'.**

Object :—To find the best seed rate and method of sowing Jowar for fodder.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Sugarcane. (c) 7 mds/ac. of castor cake+1½ mds/ac. of Super. (ii) (a) Sandy loam. (b) N.A. (iii) 14.7.1956. (iv) (a) 2 ploughings by senior Bihar plough, one operation by cultivator. (b) to (d) As per treatments. (e) N.A. (v) G.M. with *Sanai.* (vi) Local. (vii) Unirrigated. (viii) One weeding by *khurpi.* (ix) N.A. (x) 26.9.1956.

2. TREATMENTS :

Same as in expt. no. 58(255) on page 920.

3. DESIGN :

(i) Strip-plot. (ii) (a) 16. (b) 126′×78′. (iii) 3. (iv) (a) 20′×32′. (b) 18′×30′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of fodder. (iv) (a) to (c) N.A. (v) (a) and (b) N.A. (vi) and (vil) Nil.

5. RESULTS :

(i) 4683 lb./ac. (ii) (a) 1691 lb /ac. (b) 1398 lb./ac. (c) 862 lb./ac. (iii) Only interaction S×M is highly significant. (iv) Av. yield of fodder in lb./ac.

	S_1	S_2	S_3	S_4	Mean
M_1	5802	3942	4122	5130	4749
M_2	7123	3965	7370	4794	5813
M_3	4211	4838	5040	3517	4402
M_4	3808	4189	3584	3494	3769
Mean	5236	4234	5029	4234	4683

S.E. of difference of two

1. M marginal means = 690 lb./ac.
2. S marginal means = 571 lb./ac.
3. S means at the same level of M = 835 lb./ac.
4. M means at the same level of S = 921 lb./ac.

Crop :- Jowar fodder *(Kharif)*. **Ref :- Bh. 58(254).**
Site :- Bot. Sub-Stn., Sepaya. **Type :- 'C'.**

Object :—To find out the best combination of seed rate and method of sowing Jowar for fodder.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Wheat. (c) N.A. (ii) (a) and (b) N.A. (iii) 4.7.1958. (iv) (a) 2 ploughings by country plough. (b) to (d) As per treatments. (e) N.A. (v) Nil. (vi) Local. (vii) Unirrigated. (viii) Nil. (ix) 30.4″. (x) 8 to 13.10.1958.

2. TREATMENTS :

Same as in expt. no. 58(255) on page 920.

3. DESIGN :

(i) Split-plot. (ii) (a) 16. (b) N.A. (iii) 4. (iv) (a) and (b) 36′×15′. (v) Nil. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Yield of fodder. (iv) (a) to (c) N.A. (v) (a) Musheri, Putida and Monghyr. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 11290 lb./ac. (ii) (a) 4498 lb./ac. (b) 4240 lb./ac. (c) 3257 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of fodder in lb./ac.

	S_1	S_2	S_3	S_4	Mean
M_1	12298	11021	14202	14941	13116
M_2	9923	11693	12544	15389	12387
M_3	6765	7974	14179	12768	10422
M_4	8310	9229	10774	8624	9234
Mean	9324	9979	12925	12930	11290

S.E. of difference of two

1. M marginal means	=	2081 lb./ac.
2. S marginal means	=	1498 lb./ac.
3. S means at the same level of M	=	2493 lb./ac.
4. M means at the same level of S	=	2549 lb./ac.

* * *

Crop :- Sanai *(Kharif)*. **Ref :- Bh. 58(241).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'M'.**

Object :—To test the effect of phosphate applied to Sanai on soil fertility and crop yield.

1. BASAL CONDITIONS :

(i) (a) *Sanai*—Wheat—*Sanai*. (b) Wheat. (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 21.6.1958. (iv) (a) 3 times spading. (b) Line sowing. (c) 2½ oz./plot. (d) Row to row 1′. (e) N.A. (v) Nil. (vi) Local. (vii) Irrigated. (viii) Nil. (ix) 11.89″. (x) 19.8.1958.

2. TREATMENTS :

T_1=No manure.
T_2=40 lb./ac. of P_2O_5 as Super.
T_3=Seed inoculation.
T_4=Seed inoculation+40 lb./ac. of P_2O_5 as Super.
Sanai used as G.M. for succeeding crop.

3. DESIGN :

(i) R.B.D. (ii) (a) 4. (b) N.A. (iii) 4. (iv) (a) 14′×11′. (b) 12′×9′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Fodder yield. (iv) (a) 1958—N.A. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 16285 lb./ac. (ii) 2213 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of *sanai* in lb./ac.

Treatment	T_1	T_2	T_3	T_4
Av. yield	15995	18085	15946	15115

S.E./mean = 1107 lb./ac.

Crop :- Sanai *(Kharif)*. **Ref :- Bh. 58(140).**

Site :- Distt. Agri. Farm, Putida. **Type :- 'C'.**

Object :—To find out the best time of sowing Sanai.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) Fallow. (c) Nil. (ii) (a) Clayey loam. (b) N.A. (iii) As per treatments. (iv) (a) 3 ploughings. (b) Dibbling. (c) N.A. (d) 1½′×1′. (e) 3., (v) N.A. (vi) Local. (vii) Unirrigated. (viii) Thinning. (ix) N.A. (x) 26, 28.11.1958.

2. TREATMENTS :

5 dates of sowing: D_1=24.6.1958, D_2=1.7.1958, D_3=15.7.1958, D_4=1.8.1958 and D_5=16.8.1958.

3. DESIGN :

(i) R.B.D. (ii) (a) 5. (b) N.A. (iii) 4. (iv) (a) 42′×15′. (b) 40′×15′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Leaf hopper attack ; BHC 5% dusted. (iii) Yield of *Sanai*. (iv) (a) 1958—No. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 426 lb./ac. (ii) 110.1 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of *sanai* in lb./ac,

Treatment	D_1	D_2	D_3	D_4	D_5
Av. yield	905	709	387	86	42

S.E./mean = 55.1 lb./ac.

Crop :- Berseem *(Rabi)*. **Ref :- Bh. 56(187).**

Site :- Agri. Res. Instt., Pusa. **Type :- 'CM'.**

Object :—To induce seed setting in Berseem by phosphate manuring and cutting.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 4.11.1956. (iv) (a) 2 ploughings by mould board plough and one by *desi* plough. (b) Broadcast in standing water. (c) 25 lb./ac. (d) and (e) —. (v) Nil. (vi) Local. (vii) 4 irrigations by tube well. (viii) Hoeing by hand hoe after each cutting. (ix) 7.05″. (x) 19 to 24.5.1957.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 4 levels of cuttings : C_0=0, C_1=1, C_2=2 and C_3=3.

(2) 3 levels of P_2O_5 as Super : P_1=20, P_2=40 and P_3=60 lb./ac.

3. DESIGN :

(i) R.B.D, (ii) (a) 12. (b) N.A. (iii) 6. (iv) (a) 1/60th ac. (b) 1/80th ac. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Seed yield. (iv) (a) 1956—N.A. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 69.9 lb./ac. (ii) 46.3 lb./ac. (iii) None of the effects is significant. (iv) Av. yield of seed in lb./ac.

	C_0	C_1	C_2	C_3	Mean
P_1	89.5	63.8	58.6	79.2	72.8
P_2	82.3	108.0	59.7	73.0	80.8
P_3	38.1	59.7	49.4	77.1	56.1
Mean	70.0	77.2	55.9	76.4	69.9

S.E. of C marginal mean = 10.9 lb./ac.
S.E. of P marginal mean = 9.5 lb./ac.
S.E. of body of table = 18.9 lb./ac.

Crop :- Berseem *(Rabi)*. **Ref :- Bh. 57(172).**
Site :- Agri. Res. Instt., Pusa. **Type :- 'CM'.**

Object :—To induce seed setting in Berseem by nitrogen manuring and cuttings.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) 17 to 19.11.1957. (iv) (a) 2 ploughings by mould board plough and one by *desi* plough. (b) Broadcast. (c) 25 lb./ac. (d) and (e) Nil. (v) Nil. (vi) Local. (vii) Irrigated. (viii) Hoeing by hand hoe after each cutting. (ix) 2.16". (x) 11 to 16.5.1958.

2. TREATMENTS :

All combinations of (1) and (2)
(1) 4 levels of cuttings : $C_0=0$, $C_1=1$, $C_2=2$ and $C_3=3$.
(2) 3 levels of N as A/S : $N_1=20$, $N_2=40$ and $N_3=60$ lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 12. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 1/60 th ac. (v) N.A. (vi) Yes.

4. GENERAL ;

(i) Bad. (ii) Nil. (iii) Seed yield. (iv) (a) 1956—N.A. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 60.5 lb./ac. (ii) 42.0 lb./ac. (iii) Only C effect is significant. (iv) Av. yield of seed in lb./ac.

	C_0	C_1	C_2	C_3	Mean
N_1	59.6	86.4	19.4	97.2	65.7
N_2	43.2	38.3	79.9	71.3	58.2
N_3	35.5	14.8	63.3	117.2	57.7
Mean	46.1	46.5	54.2	95.2	60.5

S.E. of N marginal mean = 10.5 lb./ac.
S.E. of C marginal mean = 12.1 lb./ac.
S.E. of body of table = 21.0 lb./ac.

Crop :- Berseem *(Rabi)*. **Ref :- Bh. 57(154).**
Site :- Agri. Res. Instt., Sabour. **Type :- 'CM'.**

Object :—To induce seed setting in Berseem by phosphate manuring and cutting.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) and (b) N.A. (iii) 15.11.1957. (iv) (a) 3 times ploughed. (b) Broadcast. (c) 25 srs./ac. (d) and (e) —. (v) Nil. (vi) Local. (vii) Irrigated. (viii) Nil. (ix) and (x) N.A.

2. TREATMENTS :

All combinations of (1) and (2).

(1) 4 levels of cuttings : $C_1=1$, $C_2=2$, $C_3=3$ and $C_4=4$.
(2) 3 levels of P_2O_5 as Super : $P_1=20$, $P_2=40$ and $P_3=60$ lb./ac.

3. DESIGN :

(i) Fact. in R.B D. (ii) (a) 12. (b) N.A. (iii) 4. (iv) (a) 26½′×12½′. (b) 25′×11′. (v) 9″×9″. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) Nil. (iii) Seed yield. (iv) (a) 1957—N.A. (b) No. (c) N.A. (v) to (vii) Nil.

5. RESULTS :

(i) 128.0 lb./ac. (ii) 42.5 lb./ac. (iii) Main effect of C alone is highly significant. (iv) Av. yield of seed in lb./ac.

	C_1	C_2	C_3	C_4	Mean
P_1	91.6	90.3	138.6	128.7	112.3
P_2	118.8	110.1	168.3	162.1	139.8
P_3	85.4	117.6	165.8	158.4	131.8
Mean	98.6	106.0	157.6	149.7	128.0

S.E. of C marginal mean = 12.3 lb./ac.
S.E. of P marginal mean = 10.6 lb./ac.
S.E. of body of table = 21.3 lb./ac.

Crop :- Berseem *(Rabi)*. **Ref :- Bh. 58(153).**

Site :- Agri. Res. Instt., Sabour. **Type :- 'CM'.**

Object :—To induce seed setting in Berseem by phosphate manuring and cuttings.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) and (b) N.A. (iii) 8.11.1958. (iv) (a) 2 ploughings. (b) Broadcast. (c) 25 lb./ac. (d) and (e) Nil. (v) Nil. (vi) N.A. (vii) Irrigated. (viii) N.A. (ix) 7.73″. (x) 15.5.1959.

2. TREATMENTS :

Main-plot treatments :

4 levels of cuttings : $C_0=0$, $C_1=1$, $C_2=2$ and $C_3=3$.

Sub-plot treatments :

3 levels of P_2O_5 as Super : $P_1=20$, $P_2=40$ and $P_3=60$ lb./ac.

3. DESIGN :

(i) Split-plot (ii) (a) 4 main-plots/replication ; 3 sub-plots/main-plot. (b) N.A. (iii) 4. (iv) (a) N.A. (b) 25′×11′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Seed yield. (iv) (a) 1957—1958. (b) N.A. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 258.9 lb./ac. (ii) (a) 49.4 lb./ac. (b) 53.5 lb./ac. (iii) No effect is significant. (iv) Av. yield of berseem in lb./ac.

	C_0	C_1	C_2	C_3	Mean
P_1	285.5	279.8	234.5	269.9	267.4
P_2	193.4	274.8	229.6	260.0	239.5
P_3	249.3	320.9	229.6	279.8	269.9
Mean	242.7	291.8	231.2	269.9	258.9

S.E. of difference of two

1. C marginal means = 20.2 lb./ac.
2. P marginal means = 18.9 lb./ac.
3. P means at the same level of S = 37.8 lb./ac.
4. S means at the same level of P = 38.9 lb./ac.

Crop :- Wheat and gram *(Rabi)*. **Ref :- Bh. 58(293).**

Site :- Agri. Res. Instt., Pusa. **Type :- 'X'.**

Object :—To find out a suitable pulse crop as mixture with Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy loam. (b) Refer soil analysis, Pusa. (iii) 4 to 6.11.1958. (iv) (a) 4 ploughings by *desi* plough. (b) and (c) As per treatments. (d) Rows 10″ apart. (e)—. (v) 20 lb./ac. of N as A/S+20 lb./ac. of P_2O_5 as Super. (vi) N.A. (vii) Irrigated. (viii) Hoeing and weeding once (ix) 47.88″. (x) 21 to 23.4.1959.

2. TREATMENTS :

All combinations of (1) and (2)

(1) 2 methods of sowing : M_1=Line sowing and M_2=Broadcasting.

(2) 5 ratios of wheat and gram seed : R_1=3 : 1, R_2=2 : 1, R_3=1 : 1, R_4=wheat alone and R_5=gram alone.

Wheat and gram seed mixed by weight in these ratios and sown.

3. DESIGN :

(i) Fact. in R.B.D. (ii) (a) 10. (b) N.A. (iii) 4. (iv) (a) 35′×24′. (b) 33′×22′. (v) 1′×1′. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Grain yield. (iv) (a) to (c) N.A. (v) (a) Sepaya farm. (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 664 lb./ac. (ii) 69.9 lb./ac. (iii) Main effects and interaction are highly significant. (iv) Av. yield of grain in lb./ac.

	R_1	R_2	R_3	R_4	R_5	Mean
M_1	748	750	617	856	68	608
M_2	1007	926	663	926	77	720
Mean	878	838	640	891	73	664

S.E. of M marginal mean = 15.6 lb./ac.
S.E. of R marginal mean = 24.7 lb./ac.
S.E. of body of table = 34.9 lb./ac.

Crop :- Wheat and Gram *(Rabi)*. **Ref :- Bh. 58(127).**

Site :- Bot Sub-Stn., Sepaya. **Type :- 'X'.**

Object :—To find out the suitable pulse crop as mixture with Wheat.

1. BASAL CONDITIONS :

(i) (a) N.A. (b) Maize. (c) 1½ mds./ac. of A/S + 2 mds./ac. of Super. (ii) (a) Sandy loam. (b) N.A. (iii) 4.11.1958/N.A. (iv) (a) 2 ploughings by Bihar plough. (b) As per treatments. (c) 40 srs./ac. (d) Rows 1′ apart—N.A. (v) N.A. (vi) 799—NP. (vii) Irrigated. (viii) Once weeding by *khurpi*. (ix) 2.44″ (x) 9 and 10.4 1959.

2. TREATMENTS :

All combinations of (1) and (2) +2 extra treatments
(1) 2 methods of sowing : M_1=Line sowing and M_2=Broadcast.
(2) Ratios for wheat and gram seed mixed and sown : R_1=3 : 1, R_2=2 : 1 and R_3=1 : 1
Extra treatments are : T_1=Wheat by broadcast and T_2=Wheat by line sowing.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 4. (iv) (a) 35′×18.5′. (b) 33′×16.5′. (v) 1′×1′.. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Cater-piller was observed—no control measures taken. (iii) Grain yield. (iv) 1958—contd. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 1030 lb./ac. (ii) 75.2 lb./ac. (iii) Main effects of M and R are highly significant : 'Extra treatments *vs.* others' is highly significant. (iv) Av. yield of grain in lb./ac.

T_1=1280 lb./ac. and T_2=1460 lb./ac.

	R_1	R_2	R_3	Mean
M_1	1260	1020	800	1027
M_2	1000	820	600	807
Mean	1130	920	700	917

S.E. of R marginal means = 26.6 lb./ac.
S.E. of M marginal means = 21.7 lb./ac.
S.E. of body of table = 37.6 lb./ac.

Crop :- Wheat and Gram *(Rabi)*. **Ref :- Bh. 59(70).**

Site :- Bot. Sub-Stn., Sepaya. **Type :- 'X'.**

Object :—To find out suitable pulse crop as mixture with Wheat.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) *Moong*. (c) N.A. (ii) (a) Clay loam. (b) N.A. (iii) 10.11.1959. (iv) (a) 2 ploughings by Bihar plough and one operation by cultivator. (b) As per treatments. (c) 40 srs./ac. (d) Rows 10″ apart. (e) N.A. (v) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (vi) 799—NP. (vii) Irrigated. (viii) Weeding by *khurpi*. (ix) 2.82″. (x) 11.4.1960.

2. TREATMENTS :

Same as in expt. no. 58(127) above.

3. DESIGN :

(i) R.B.D. (ii) (a) 8. (b) N.A. (iii) 3. (iv) (a) 40′×18′. (b) 36′×16.5′. (v) 2′×1′. (vi) Yes.

4. GENERAL :

(i) Good. (ii) Nil. (iii) Grain yield. (iv) (a) 1958—contd. (b) No. (c) Nil. (v) (a) and (b) N.A. (vi) and (vii) Nil.

5. RESULTS :

(i) 735 lb./ac. (ii) 75.4 lb./ac. (iii) M×R interaction is significant. Main effects of M and R and extra treatments *vs.* others' are highly significant. (iv) Av. yield of grain in lb./ac.

T_1=946 lb./ac. and T_2=1186 lb./ac.

	R_1	R_2	R_3	Mean
M_1	583	706	840	710
M_2	487	542	593	540
Mean	535	624	717	625

S.E. of R marginal mean = 30.8 lb./ac.
S.E. of M marginal mean = 25.1 lb./ac.
S.E. of body of table = 43.5 lb./ac.

Crop :- Wheat ***(Rabi).*** **Ref :- Bh. 58(301).**

Site :- Bikramganj (Village N.A., c.f.). **Type :- 'X'.**

Object :—To find out suitable pulse crop as mixture with Wheat.

1. BASAL CONDITIONS :

(i) (a) to (c) N.A. (ii) Sandy loam. (iii) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super, except in T_8 and T_{10} plots where only 40 lb./ac. of P_2O_5 as Super was given. (iv) Wheat : NP—52, Gram : ST—4. (v) (a) to (e) As per treatments. (vi) 19, 20.11.1958. (vii) and (viii) N.A. (ix) 5.58". (x) 31.3.1959 and 1.4.1959.

2. TREATMENTS :

	Crop	Method of sowing	Seed ratio	Spacing
T_1	Wheat+Gram	Broadcast	3 : 1	—
T_2	Wheat+Gram	Broadcast	2 : 1	—
T_3	Wheat+Gram	Broadcast	1 : 1	—
T_4	Wheat+Gram	Line sowing	3 : 1	Lines 10" apart
T_5	Wheat+Gram	Line sowing	2 : 1	Lines 10" apart
T_6	Wheat+Gram	Line sowing	1 : 1	Lines 10" apart
T_7	Wheat alone	Broadcast	—	—
T_8	Gram alone	Broadcast	—	—
T_9	Wheat alone	Line sowing	—	Lines 10" apart
T_{10}	Gram alone	Line sowing	—	Lines 10" apart

3. DESIGN :

(i) and (ii) R.B.D. with 4 replications. (iii) (a) 47'×13'. (b) 45½'×12'. (iv) Yes.

4. GENERAL :

(i) and (ii) N.A. (iii) Grain yield. (iv) (a) and (b) N.A. (c) Nil. (v) to (vii) Nil.

5. RESULTS :

(i) 1213 lb./ac. (ii) 108.2 lb./ac. (iii) Treatment differences are highly significant. (iv) Av. yield of grain in lb./ac.

Treatment	T_1	T_2	T_3	T_4	T_5	T_6	T_7	T_8	T_9	T_{10}
Av. yield	1416	1376	1257	1456	1537	1376	1276	578	1316	539

S.E./mean = 54.1 lb./ac.

Crop :- Pea and Gram. **Ref :- Bh. 54(49).**

Site :- Bot. Sub-Stn., Bikramganj. **Type :- 'X'.**

Object :—To study the effect of seed inoculation on the yield of Pea and Gram .

1. BASAL CONDITIONS :

(i) (a) Paddy—Legumes—Paddy. (b) Paddy. (c) 40 lb./ac. of N as A/S+40 lb./ac. of P_2O_5 as Super. (ii) (a) Sandy loam. (b) Refer soil analysis, Bikramganj. (iii) 13.12.1954. (iv) (a) 2 *desi* ploughings. (b) Behind the plough. (c) 60 lb./ac. for Gram and Pea each. (d) Between rows 1′. (e) —. (v) Nil. (vi) Gram : S_4 ; Pea : local. (vii) Unirrigated. (viii) No. (ix) 1.41″. (x) 2.4.1955 and 3.4.1955.

2. TREATMENTS :

1. Gram seed to be inoculated with culture obtained from gram root nodule and sown.
2. Soil to be inoculated with culture obtained from gram root nodule and gram seed sown.
3. Gram sown without inoculation treatment.
4. Pea seed to be inoculated with culture obtained from pea root nodule and sown.
5. Soil to be inoculated with culture obtained from pea root nodule and pea seed sown.
6. Pea sown without inoculation treatment.

3. DESIGN :

(i) R B.D. (ii) (a) 6. (b) 38′×94′ (iii) 5. (iv) (a) and (b) 14′×38′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Satisfactory. (ii) Nil. (iii) Growth, date of flowering ; no. of nodules and yield of grain. (iv) (a) 1953—1956. (b) Yes. (c) Nil. (v) (a) All botanical sub-stations. (b) N.A. (vi) and (vii) Nil.

4. RESULTS :

(i) 469 lb./ac. (ii) 182.6 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	1	2	3	4	5	6
Av. yield	539	535	472	467	429	371

S.E./mean = 81.6 lb./ac

Crop :- Pea and Gram *(Rabi)*. **Ref :- Bh. 58(318).**

Site :- Model Agronomy Farm, Sabour. **Type :- 'X'.**

Object :—To study the effect of P to legumes on the succeeding crop of paddy under irrigated conditions.

1. BASAL CONDITIONS :

(i) (a) Nil. (b) and (c) N.A. (ii) (a) Sandy loam. (b) N.A. (iii) Gram : 5.12.1958, Pea : 11.12.1958. (iv) (a) 3 ploughings with *desi* plough. (b) Line sowing. (c) Gram and Pea 30 srs./ac. (d) Rows 1′ apart. (e) N.A. (v) Nil. (vi) Gram : ST_4 ; Pea : BR_{12}. (vii) Irrigated. (viii) One weeding by hand hoe. (ix) 4.03″. (x) Pea 28 to 30.3.1959 ; Gram 6.4.1959.

2. TREATMENTS :

All combinations of (1) and (2)+a fallow
  (1) 2 legumes : L_1=Gram and L_2=Pea.
  (2) 3 levels of P_2O_5 as Super : P_0=0, P_1=40 and P_2=80 lb./ac.

3. DESIGN :

(i) R.B.D. (ii) (a) 7. (b) N.A. (iii) 3. (iv) (a) 16½′×103′. (b) 14¾′×88½′. (v) N.A. (vi) Yes.

4. GENERAL :

(i) Poor. (ii) Nil. (iii) Grain yield. (iv) (a) 1958—1962. (b) Yes. (c) Nil. (v) (a) and (b) Nil. (vi) Nil. (vii) Analysis done for Gram and Pea separately.

5. RESULTS :

Gram

(i) 946 lb./ac. (ii) 176 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	P_0	P_1	P_2
Av. yield	878	1090	870

S.E./mean = 101.6 lb./ac.

Pea

(i) 457 lb./ac. (ii) 184 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	P_0	P_1	P_2
Av. yield	422	362	586

S.E./mean = 106.2 lb./ac.

Crop :- Pea and gram *(Rabi)*. **Ref :- Bh. 59(231).**

Site :- Model Agronomy Farm, Sabour. **Type :- 'X'.**

Object :—To study the effect of direct application of P_2O_5 to legumes on the succeeding crop of Paddy under irrigated conditions.

1. BASAL CONDITIONS :

(i) (a) Pea+Gram—Paddy—Pea+Gram. (b) Paddy. (c) 0, 15, 30 lb./ac. of N as A/S to respective plots. (ii) (a) Sandy loam. (b) N.A. (iii) 3.11.1959 to 2.12.1959. (iv) (a) 2 ploughings by *desi* plough. (b) Line sowing. (c) 30 srs./ac. both for gram and pea. (d) Rows 1′ apart. (e) N.A. (v) Nil. (vi) Gram : ST_4 Pea : BR_{12}. (vii) Irrigated. (viii) One weeding by hand hoe. (ix) 3.20″. (x) 1.4.1960.

2. TREATMENTS to 4. GENERAL :

Same as in expt. no. 58(318) on page 932.

5. RESULTS :

Gram

(i) 313 lb./ac. (ii) 170 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	P_0	P_1	P_2
Av. yield	289	318	332

S.E./mean= 98.1 lb./ac.

Pea

(i) 205 lb./ac. (ii) 81.3 lb./ac. (iii) Treatment differences are not significant. (iv) Av. yield of grain in lb./ac.

Treatment	P_0	P_1	P_2
Av. yield	162	226	228

S.E./mean= 46.9 lb./ac.

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